MARCH, 1950

American Engineer

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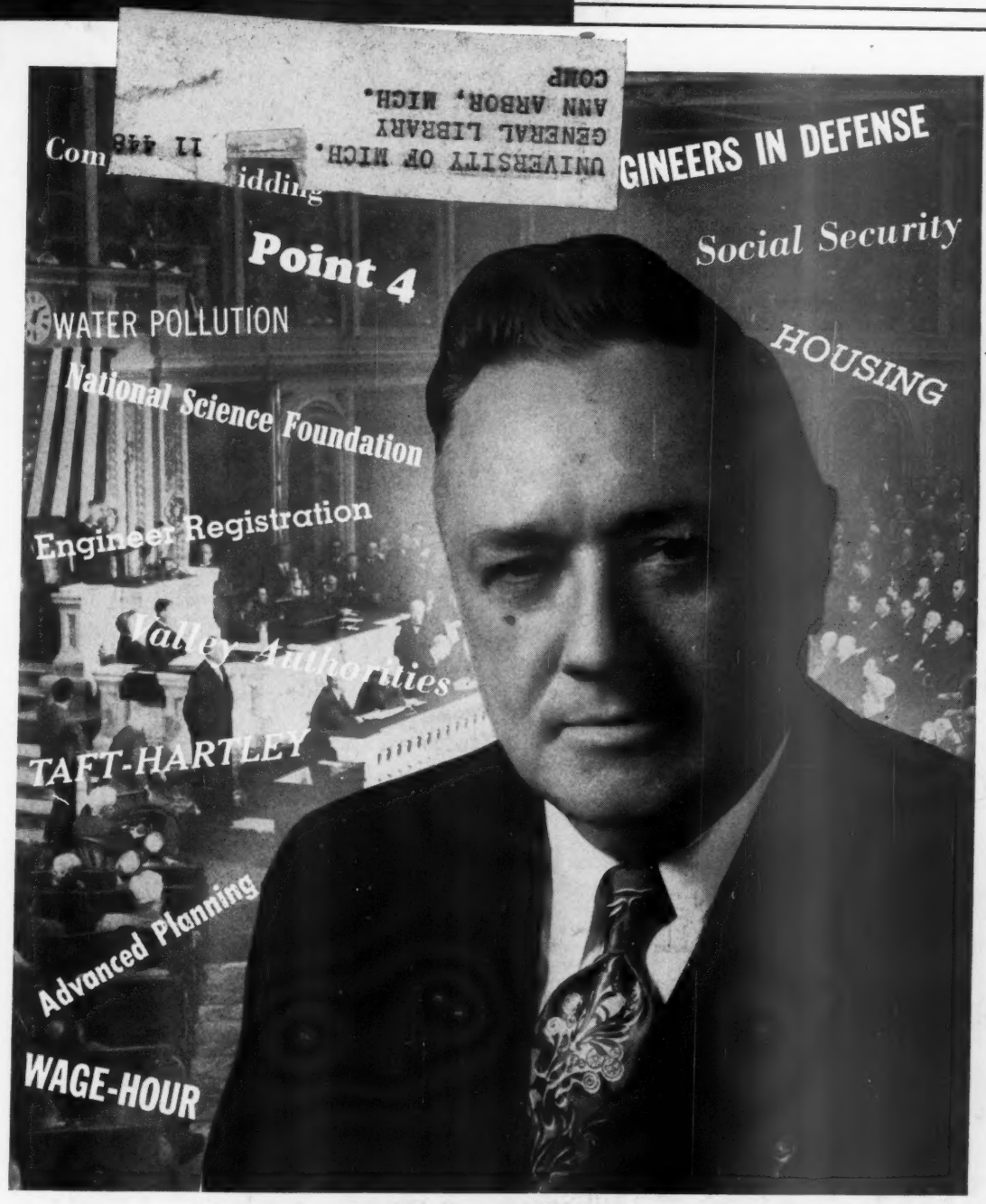
IN THIS ISSUE . . .

The Cover Story:

AN ENGINEER-SENATOR IS INTERVIEWED



SENATOR HARRY DARBY OF KANSAS

Careers, Politics, and Responsibility

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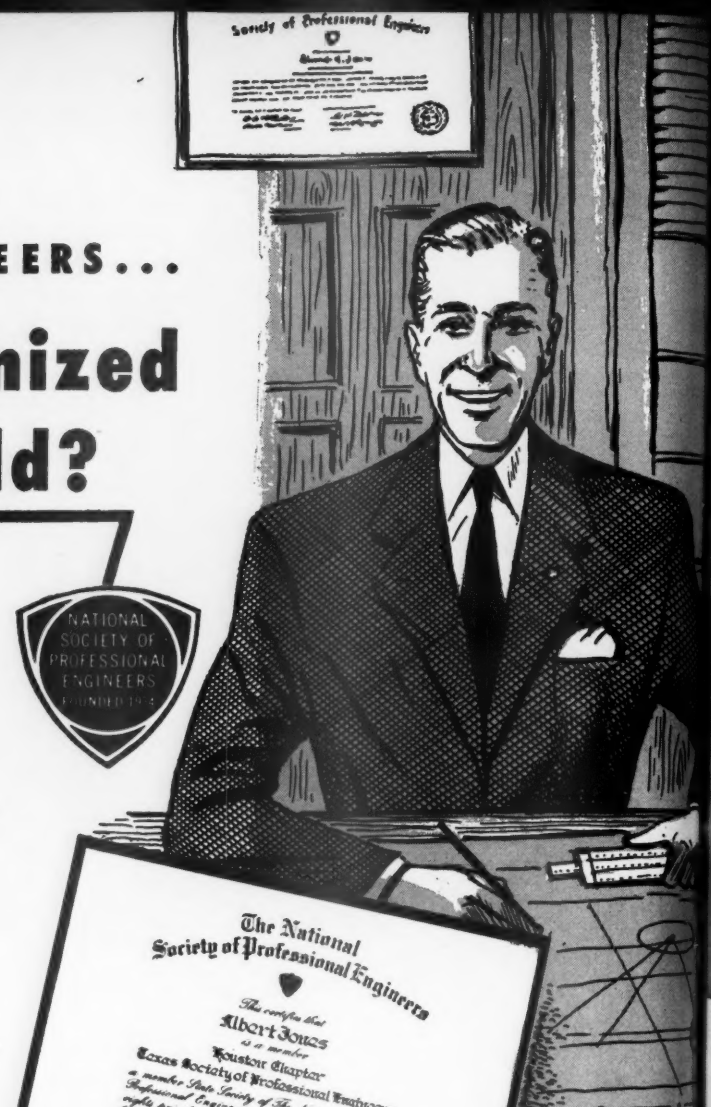

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American Engineer

MARCH 1950

COVER STORY. An American Engineer Interview With U. S. Senator Darby of Kansas 6

The Professional Engineer In Railroading 8
James H. Aydelott, Vice President, Association of American Railroads, Tells of the Engineers' Role In a Basic Industry

Why Is Public Relations Important? 10
F. F. Gregory, Public Relations Director of a Large Corporation, Explains How Every Engineer Can Practice Public Relations

NSPE Testifies Before Senate Committee 14

Regular Features

Editorials 4
Accent On Activity 5
Legislative Report 17
Around The Nation With Our Members 19

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NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS FOUNDED 1934

Editor
KENNETH E. TROMBLEY

Business Manager
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Publications Committee, NSPE
GEORGE KRUEGER, Chairman

"The typical engineer wants to work under a system in which he can develop his abilities to a maximum extent, utilize them to the best advantages of society, his employer, and himself, and be assured of financial return commensurate with his performance. He wants to be free of fear of losing his prestige, social position, or economic position; and mentally and emotionally free to devote himself wholeheartedly to the inspiring task of greater engineering achievement. He wants the comforting assurance that he acted wisely in choosing the engineering profession as his life's work."

N. W. DOUGHERTY,
Dean of Engineering,
University of Tennessee

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EDITORIALS

Universal Problems . . .

A report of a meeting sponsored by the Junior Section of the British Columbia Engineering Society contains much information pertinent to us on this side of the border. If misery loves company, we are both in a position to lend a sympathetic ear to one another, for the problems that beset the engineering profession in the United States, are just as vexing to our Canadian friends.

At the British Columbians' meeting, men with interests in varying fields of the profession, discussed evils not unfamiliar to the American. A college president pointed at "a demand that the engineer know something of business methods, economics, commercial law . . . as well as technical knowledge." A representative of private industry suggested that a salary scale for engineers might be based on a percentage of the prevailing wages paid to journeymen in various industries. He then turned to unionism stating that union methods tend to restrict initiative, divorce the engineer from management, and level all engineers to an average low standard.

That the engineering profession's problems are universal is only of practical interest because it is undeniable proof that many of the engineer's problems are of his own doing, and not attributable to a country's economic and social way of life. The engineer has too long kept his "light under a bushel." Only as he develops a professional consciousness and assumes the responsibility such concepts entail, will he receive the professional status to which his education and experience entitle him.

A Step Forward . . .

It is with considerable pleasure that the engineering profession learns of the plans of another excellent technical school to add courses to its engineering curriculum strengthening the student's humanistic-social background.

A new and more liberal program at Case Institute of Technology is the result of two years of intensive study by the entire Case faculty, large bodies of students and alumni, and consultants from the industrial and educational worlds. One result of this "Self Survey" is the creation of a new freshman course in "The Background of American Democracy," and a two-year course beginning in the sophomore year, entitled "The History of Western Civilization." In addition, a remedial English program has been started which requires the student to develop his speaking and writing skills throughout his entire college career if necessary.

To take his place in society in a hectic world, it is essential that the engineering graduate understand the heritage of economics, science, art, religion, music, politics, and similar forces which have shaped men's lives since ancient times. It is also imperative that he be able to express himself with ease either verbally or with the written word. It appears, then, that Case's new curriculum will serve well as a prototype for other institutions sincerely interested in promoting the cause of engineering professionalism.

Sign of the Times? . . .

The Washington *Post* recently carried a news article about the appointment of a grand jury for the District of Columbia. This of course was not note-worthy news but the headline was intriguing for it was "Civil Engineer Heads Grand Jury." Apparently this was the most significant news item out of the grand jury selections. Something like "Dog Bites Man." Strangely enough this same fact in a number of variations is occurring throughout the country. Engineers are taking their place in civil activities in many communities as professional people should. Several engineers in New Jersey recently led civic organizations in protesting lack of an adequate building code to protect the community from shabby housing. An engineer in Ohio ran successfully for city councilman. Engineers in Oklahoma played important roles in allocation of a bond issue for state charitable institutions.

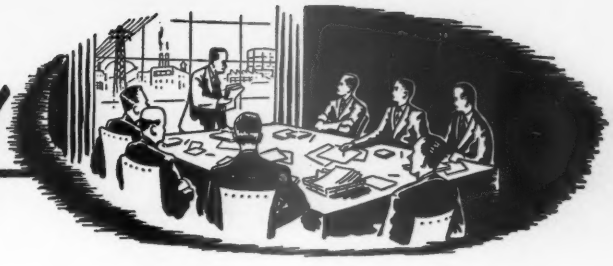
Perhaps now it is newsworthy when engineers take active part in civic affairs. We predict however, as professional consciousness increases among engineers, it will come to be expected by the public and newspaper editors that engineers will be taking the lead in these affairs as they have in industrial development, the betterment of living and so many good things we now enjoy.

Disheartenment In New England . . .

Recently Massachusetts engineers were asked to express their opinion by ballot on whether or not they desired their State to retain a permissive registration law, or whether they preferred the adoption of a mandatory form. (AMERICAN ENGINEER, February, 1950.) In this true democratic fashion the question was settled, with ballots coming in from twenty-five constituent groups including the Massachusetts Society of Professional Engineers. These groups are to be commended for an excellent cooperative effort in studying a highly controversial issue. *Not to be commended, however, are the 5,939 engineers (about 58%) who did not even take the trouble to return the ballots sent them!*

This sad commentary on professional pride can only bring dejection to those who have worked long and hard to instill high concepts in the engineer. When responsibility to one's profession languishes to such an extent on a matter as vital as the Massachusett's law, the only logical conclusion that can be drawn is that we have a long, long way to go before the profession can hope to attain its lofty goals.

Accent on Activity



AT THE BOARD MEETING in December, it was recommended that "specific solutions to mutual problems be developed by State Societies in collaboration with the State Architectural Societies." **This is working. Missouri:** MSPE has extended idea to other professions—have met with lawyers to discuss writing of contracts for engineering services. **Tennessee:** Combined engineers and architects registration board met with State Society and Architectural Society. **Texas:** San Jacinto Chapter has worked out inter-professional standards of relations between architects and engineers. **Pennsylvania:** Developed into professional relations satisfactory to the engineering and architectural societies . . . NSPE ATTENDED State Department Conference — See **Legislative Report** in this issue for complete report. . . . THINGS ARE HUMMING ON LEGISLATIVE FRONT: Letter from NSPE to House Committee **supporting tax plan** which provides for people with incomes varying from year to year to level out income for tax purposes. **Also, NSPE testified before Senate Finance Committee** re bill to extend and improve the Federal Old-Age and Survivors Insurance System. See complete story on Page 14 of this issue . . . NSPE OFFICIALS have kept airlines and trains busy. **Vice Pres. Emerson** appeared at North Carolina meeting. **Molineaux,** Vice Pres., NYSSPE on program of New Hampshire Society. **President-elect Stolte** spoke before Wyoming Engineering Society Annual Meeting, and ASCE's Wyoming Section. **Legislative Analyst Lunch,** NSPE, journeyed to Ohio to address Dayton Chapter meeting. **Ex. Director Robbins,** NSPE, has been before Illinois and Minn. Societies and St. Louis, Rolla, Mo., and Chicago Chapters. **Vice Pres. Coleman** attended California Annual, and **President Stanford** addressed the D. C. Society . . . MEETING OF PLANNING COMMITTEE of Inter-Society on Unity of Engineer Profession, held Feb. 3 in New York, and Feb. 27 in Chicago. Ex-President Van Praag represents NSPE . . . Ex. Director Robbins, NSPE, spoke before **American Public Relations Association** in Washington. Appearance gained him three more speaking engagements from association members . . . JUST OFF PRESS: Revised edition of "NSPE Constitution," and 1950 edition of "Next Step Registration." **Last named booklet will be distributed by State Societies to engineering seniors** . . . WASHINGTON OFFICE frequently receives calls from industrial firms requesting names of special types of engineers in various parts of the country. **NSPE Data Cards supply answers quickly.** Recent request: engineers in air conditioning and electrical equipment work, for positions in Southeastern part of country . . . SEVERAL STATE SOCIETIES have sent word that they will have **speakers at engineering student convocation this spring.** This is not only good public service by the Society, but helpful to the young engineers. Some states go step farther: Registration Boards will hold EIT exams on campus before grads leave school . . . OF INTEREST TO ENGINEERS are recent regulations of the Public Housing Administration pertaining to **their employment in surveying work which is incidental to projects.** Conferences between Hqs NSPE and PHA officials indicate that previous regs which should be changed **will be revised. Revisions will eliminate** sections concerning collective bargaining provisions for employees of such surveyors, and procurement of surveying services on a competitive bidding basis . . . REQUESTS FOR MEMBERSHIP BROCHURE "Man Was Naked," continue to arrive — campaign termed successful in all quarters . . . STATE SECRETARIES' AND PRESIDENTS' meeting in Nashville in March is expected to give all an opportunity to **talk things over.** The exchange of ideas in the past has been beneficial to all.

AN *American Engineer* INTERVIEW

With HARRY DARBY, U. S. Senator From Kansas, and Charter Member, Kansas Society, NSPE

DURING his fifty-four years, Harry Darby, new U. S. Senator from Kansas, and a charter member of the Kansas Society, NSPE, has been, in turn, soldier, mechanical engineer, business man, civic leader, and statesman. His personality and his accomplishments personify the type of engineer the profession and the nation need desperately. What does he feel toward the profession in which he obtained his start? Why are there so pitifully few engineers in politics? Will future national legislation have an influence on the engineer? To answer these and other questions, Paul H. Robbins, Executive Director, NSPE; Milton F. Lunch, Legislative Analyst, NSPE; and Kenneth E. Trombley, Editor, AMERICAN ENGINEER, recently met Senator Darby in what the senator preferred to call a "visit" rather than an "interview." The meeting (see cut) was held in a committee room off the Senate chambers.

ROBBINS: This is a rather time-worn question, Senator, but we would like your opinion on it: Why is it, do you think, we have so few engineers here in the Senate and the House?

DARBY: Well, to answer that I believe we have to delve into the engineer's education and personality traits. First, I have long felt that the education we give our engineering boys is lacking greatly in the sort of things anybody must have a grasp of to really move ahead. For example, when I went to school I tried to take a few business courses and law courses in addition to my engineering work, but I was told that I couldn't cut across established lines like that. The result was that I, like just about every other engineer, went out into the business world ignorant of things I should have known about.

ROBBINS: Has it been your experience since that time that engineers suffer from the lack of a well-rounded education?

DARBY: Yes, it has. I've been in the engineering business in Kansas City for many years and naturally, I've known a good many engineers. As I said before, the engineer gets out of college trained only in how to design a steel member or lay a foundation. More than likely he'll get behind a drawing board and stay there, thinking that his work will speak for itself. Soon he comes to realize that the boss is looking for more than technical knowledge in a man. The boss wants a man who will help him worry and assume responsibility. The boss wants a man who knows the plant from front door to back door; a man who is interested in more than what goes on in front of him.

LUNCH: He wants aggressiveness, then?

DARBY: That's it. Everyone loves a "doer." Engineer, lawyer, doctor, storekeeper—its the "doer" who goes places.

TROMBLEY: Will education make him a "doer," Senator, or is it inherent personality traits that must somehow be changed?

DARBY: Well, of course, the engineer is a particular type of individual. By nature he is conservative and exacting, but I feel that the proper type of education when the man is in his formative years will help to develop his personality and make more of a "doer" out of him.

ROBBINS: Of course, as you well know, many of our engineering schools are now adding more work in English courses, public speaking, literature, social studies and the like. It is hoped that this will broaden the engineer's view.

DARBY: Yes, I know there is much progress being made along this line, and I think much of the credit must go to organizations such as NSPE, who have professional interests at heart.

LUNCH: Some engineers don't take much of an active interest in national politics, Senator Darby. Would you care to comment on this?

DARBY: I'm afraid that's true, and its an unhappy situation because not only are some of our best brains lost to the nation, but the engineering profession suffers as well.

LUNCH: How does it affect the profession?

DARBY: Take a look at some of the subjects now being talked about in the House and the Senate: Point Four. Advanced Planning. Taft-Hartley. Wage-Hour. The armed forces. Water pollution. The valley authorities. Are they important to the engineer? Why, some of them are strictly engineering projects, while a dozen others will affect in some measure the engineers' business and social life. If the engineering profession isn't taking an interest in these things, the loss is not only the nation's but the engineers' as well.

TROMBLEY: What about Point Four, Senator?

DARBY: If Point Four becomes law, it will be a program calling for much advice from the engineer. Even the Mar-

"Engineer, lawyer, doctor, storekeeper — its the 'doer' who goes places."

shall Plan gave the engineers a major role to play.

ROBBINS: Senator, we agree the engineer should take a greater interest in politics and civic affairs on both the local and national level. How do you think he can best do this?

DARBY: The city, the state, and the federal government never before needed the help of its outstanding citizens as much as it does today. A tragic war coupled with movement into the atomic age has engendered a feeling of fear and discouragement that crys for leaders to dispell. No one is better trained than the straight-thinking engineer—if he'll only do it—to take an active part in civic affairs and national politics. Whether it's 4-H Club work, civilian defense, city planning, or what have you, the engineer can be the leader. And more than that, he should get into local and national politics if he thinks he can do a better job than the next fellow.

ROBBINS: It's gratifying to note that more and more engineers are becoming mayors of cities, members of State Legislatures, on Governor's committees, and so forth.

DARBY: I'm happy to hear that for we need everyone who, as I said a little while ago, is a "doer."

TROMBLEY: Senator, as you know, NSPE has become increasingly public relations conscious the past few years. Along what lines should such a public relations program be directed?

DARBY: As I see it, your public relations program should be designed to do two jobs. First, you must sell the engineer on professionalism. You must get him to feel and act like a professional man, and one who is willing to assume responsibility as such. It's all very well and good to have prestige, respect, a good salary, and everything else that goes with it, but none of these things come without responsibility. Then, after you have sold the profession, the next and more difficult job is to sell the public. This, of course, is a long term proposition, but we should remember that it wasn't too many years ago when the doctor had far less respect and professional status than he has today.

"If the engineer takes no interest in politics, the loss is his own."

ROBBINS: Do you think, Senator Darby, that the engineer is gaining ground as a professional man, or is he becoming more of a technician?

DARBY: I think he is gaining ground as a professional man. Certainly he is if he absorbs the importance of self accomplishment in addition to educational and technical advancement. That's why a professional organization such as NSPE must spend a great deal of effort to put its story across now.

ROBBINS: What could you say about registration of engineers, Senator?

DARBY: The profession began to move forward with the registration movement. It is the mark of the competent man and a necessary barrier to the unfit. I believe the time is not too far distant when registration will be as widely accepted in engineering as it now is in law and medicine.

ROBBINS: Thank you very much, Senator, for seeing us this afternoon. It was a distinct pleasure.

DARBY: I feel honored that you called, and I wish you gentlemen and NSPE's officers and membership every possible success.

(*Editor's Note: Other* AMERICAN ENGINEER *Interviews of interest to the engineering profession, will appear in future issues.*)

A discussion of engineering and politics. From left to right: Kenneth E. Trombley, Editor, *American Engineer*; Senator Harry Darby of Kansas; Paul H. Robbins, Executive Director, NSPE; and Milton F. Lunch, Legislative Analyst, NSPE.

The Professional Engineer In Railroading

James H. Aydelott

By

James H. Aydelott

Vice President in Charge of the Operations and Maintenance Department, Association of American Railroads

JUST 121 years ago, a pint-sized engine puffed and rattled its way over a rickety wooden track and became the first locomotive to run on rails of a transportation company in America. Today, thousands of swift passenger and freight trains are pounding across the continent. This spectacular expansion of the railroad plant occurred in the intervening years, being due in no small measure to the courage, ingenuity and resourcefulness of the railroad engineer—the man who has built America's great network of rails and has made it the world's most efficient and the most readily expandable transportation system.

When we speak about a railroad engineer, a great many people believe we are discussing the man who drives a locomotive, and to clear up this misunderstanding, the railroads now refer to the locomotive driver as an engineman. The professional engineer is a dominant figure in the economic life of our railway systems and he will continue in this status so long as railway systems exist.

The railway engineer does not rest on the accomplishments of the past, although they may be noteworthy, and in this age when there is much lack of stability in charges for the carrying of goods and passengers in the highly competitive transportation field, the refinement of the railway plant and equipment must continue toward the goal of lower production costs. It is on that account that the engineer must be familiar with all the cost factors entering into the transportation of goods and persons, in volume that is seldom stable, a condition not unusual in view of the wide expanse of our nation and the diversity of its economic life.

Basic engineering principles, however, are subject to little change and produce as effective results economy- and service-wise in refinements of line and gradient as are possible in pioneer construction. Professional engineers in the several specialized groups must cooperate to keep the plant and equipment in tune with the more exacting demands of shippers and travelers. Longevity in the materials of whatever class used in construction and maintenance is the objective of research and experience under service conditions.

The research engineer uses an oscillograph in much the same way as a doctor uses a cardiograph, except that the engineer is concerned with vibrations, stresses, motion, or displacements rather than heart-beats. Here, E. N. Callender, research engineer of The Budd Company, makes readings during one of the 100-mile-an-hour test runs.

THE accomplishments of railroad engineers are divided into two distinct periods. The first starts with the earliest days of railroading and continues down to the beginning of this century. This was a period of great construction and growth, when the major task of engineers was to build a vast rail network in order that the country might be opened up and unified.

By 1900, the extensive building of railroads into new territories was about over. More and more attention was to be devoted to the intensive improvement of existing railroads to fit them to handle heavier traffic, and to

handle it more efficiently and economically. And so, technical improvement and progress have keynoted the 50-year period from 1900 down to the present.

In developing an entirely new and swiftly growing industry, railroad engineers were at first concerned almost entirely with the probelms of location and construction. They were not concerned with efficiency so much as with the feasibility of operation. In tackling such early problems as the width of roadbed and slopes, the size of locomotives and rolling stock, the matter of drainage, the type and length of bridges, the kind and size of ties, they had to be content with the most practicable solutions. Research concerning these subjects was a far cry from the methods and refinements of present-day research. The main goal was to build as rapidly as possible.

Track gauge, as well as maximum practical gradient and curvature, were also among the early problems. Since there was no experience with any form of motive power other than horse power, there was much speculation as to how steep a grade might be feasible for a steam locomotive. And so, relatively steep grades were encountered by America's first railroads.

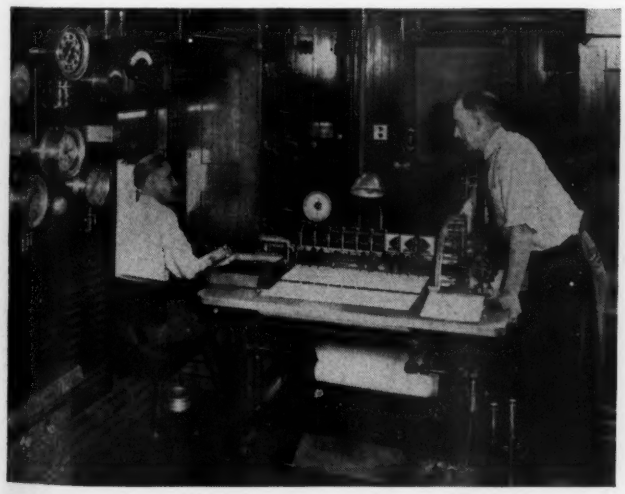
The gauge of track varied widely, from region to region, as the engineers proceeded at their fast and furious pace of railroad building. As late as the Civil War, there were 11 different gauges in Confederate territory and at least 23 in the whole country, in 1871.

HOWEVER, as the science of railroad engineering progressed beyond the earliest experimental stages, more and more emphasis came to be placed upon standardization of equipment and economy of construction and operation. By the time the 1880's had rolled around, railroad engineers and officials had cooperated together in standardizing most track at the present width of 4 feet 8½ inches. Freight cars and locomotives were being designed to certain specifications, and arrangements had been made for the free interchange of cars from railroad to railroad.

It was at this time that Arthur M. Wellington's classic, "Economic Theory of the Location of Railways," appeared. With its emphasis on the need for locating and building railroads according to sound economics, it had a wide influence in the engineering profession. Hundreds of miles of railway lines were rebuilt, often more than once, as the value of better grades and curves was demonstrated. Standardization was hastened along by Theodore Cooper's system of rating to indicate the wheel loads that could safely be handled over railroad bridges.

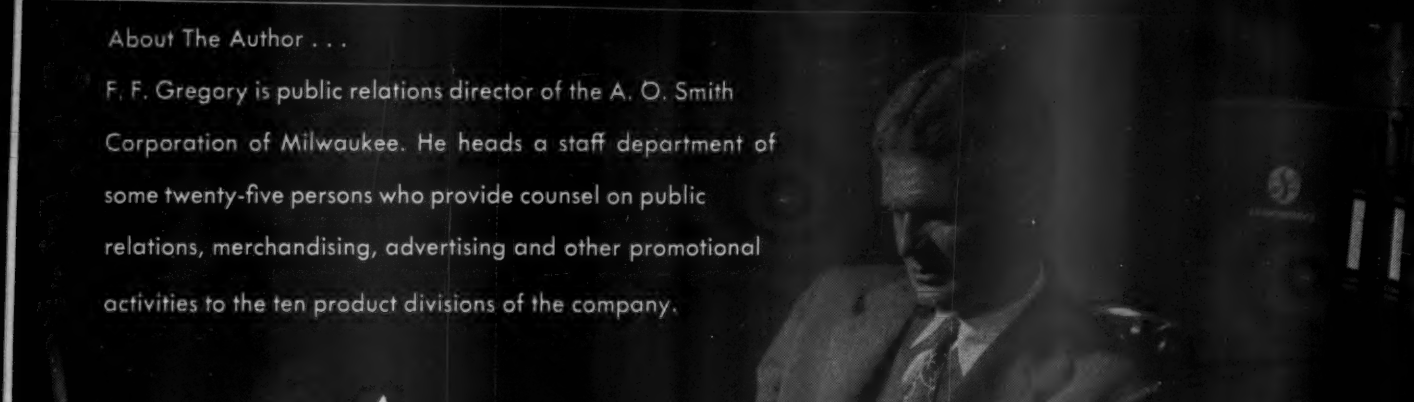
Despite this growing emphasis on economy and standardization, however, the locator and builder of new lines remained the most popular type of railway engineer. Up until the turn of the century, there was more appeal in a job of building in far-away new territory than there was in the then prosaic job of improving and maintaining the tracks once they were built. A notable company of build-

(*Continued on page* 31)



Railroad research laboratory on wheels contains sensitive instruments to record the speed, the engine pull and a wide variety of technical data on locomotive performance. Exhaustive tests are under auspices of the Association of American Railroads.

During a 100-mile-an-hour test run by The Budd Company's laboratory on wheels, engineers use a delicate microphone to pick up sound vibrations which are transmitted to a wire recording apparatus.



About The Author . . .

F. F. Gregory is public relations director of the A. O. Smith Corporation of Milwaukee. He heads a staff department of some twenty-five persons who provide counsel on public relations, merchandising, advertising and other promotional activities to the ten product divisions of the company.

Why Is Public Relations Important?

By F. F. Gregory

ENGINEERS always like definitions—so let's start by saying that Public Relations is the collective opinion of everybody at a given moment toward a given thing or activity.

Now reasoning from that broad definition, note first that Public Relations are not inherently good, bad, or indifferent. As examples, the Public Relations of the Democratic Party in this country are undoubtedly good; good enough to elect a national president five times in a row. The Public Relations of the Republican Party are indifferent, in that no where do they have either a preponderance nor an absence of voting support. And the Public Relations of the Communist Party in this country are so bad that to be proved a Communist is worse than to be convicted of most crimes.

Note second, that Public Relations vary in breadth, inasmuch as practically every adult in the United States has some kind of an opinion toward the General Motors Corporation, while less than one in a hundred thousand has an opinion toward the Federal Reserve Bank.

Third, note that Public Relations are never static; they are in a constant state of flux. Thus, no heavyweight boxing champion was ever more unpopular while champion than Jack Dempsey. Yet since losing the championship and retiring from the ring, he has become one of the most popular fighters alive.

And relative to this last point, observe that anything which is as fluid as Public Relations is subject to planned improvement, in quality, in breadth, and in intensity.

Why are Public Relations Important?

BUT why is all this important? Well, it's important because there is no power on earth today as potent as that of public opinion. Public Opinion can make and break political parties, huge businesses, and private individuals. Time was when a giant railroad builder could exclaim pettishly, "the public be damned!" and stay in business. But that time has long since passed. And good riddance to it. To survive and flourish today, a man, a company, or a movement *must* convince a substantial number of people that it is operating in the public interest. And that is all to the good, because with today's many means of mass communication, no unworthy cause can long deceive the public it serves, which is another way of saying that nowadays an informed public opinion can make short work of unworthy enterprises while encouraging and supporting worthy ones.

At this point it may be interesting to note that almost no profession can be said to enjoy *good* Public Relations. Consider the three professions known best to the general populace—the pulpit, the bar, and the scalpel. More than half of our population carefully stays away from church. Most of our population fear "going to a lawyer." And the public support for socialized medicine is sufficient evidence that the gratitude and loyalty that our grandfathers felt toward their medical practitioners has largely disappeared.

The reason for this public apathy, distrust, or actual antagonism, may become apparent further in this discussion.

Must Have Good Public Relations

Now, by implication, we have defined the essence of *good* Public Relations. Since no unworthy program can long enjoy *good* public relations, logic indicates that the first prerequisite of good public relations is that a program *be* good—good, worthy, constructive, contributing to human welfare.

But mark this well. To enjoy good public relations it is not enough to *be* good. You must also be *known* to be good. And that involves two vital factors: Careful interpretation of motives, decisions, and acts; and the prompt and widespread communication of these interpretations to the public.

What is "the Public"?

Now let's analyze the word "Public" which we have used so frequently. Public is a noun of convenience that actually doesn't mean anything. There is no surch thing as *a Public*—there are only *people*. And what we call "the Public" or "a Public" is only a particular grouping of people with like interests.

For example, you, the reader, are at one and the same time, a member of many "publics." As an engineer, your opinion is important to all kinds of organizations. As a consumer of clothes, food, drugs, and automobiles, you are important to many others. As a father, you join the PTA. As a voter, you influence elections. As a taxpayer, you help determine public services and costs. Actually, unless you are a hermit, you are probably a member of at least a dozen "publics."

What Publics for Engineers?

Basically, there are about eight publics that are of interest to every business concern. And since most engineers work either directly for business concerns or as consultants to business concerns, we might well restrict our further consideration to the Public Relations of a business.

The welfare of most companies is directly and profoundly affected by the esteem of its employes, stockholders, customers, suppliers, competitors, related industries, plant communities, and government. All engineers can affect their company's relations with some of these publics, and some engineers have to do with all of them.

Employes

Let's start with employe relations. Suppose as an engineer you have been instrumental in developing a mechanized process that will enable ten men to do the work now requiring 100. And suppose in natural pride you tell your wife about it, and next day in the crowded grocery she repeats your words and says, "My husband just developed a process that will do away with 90 jobs in the heat treating department."

Ouch! And likewise, help! That's a production man's talk, not public relations talk. Anyone who overhears that statement immediately thinks of technological unemployment, and thinks of your company and you as spending your time and energy trying to cut people out of work. You stated an honest fact—but you didn't interpret it properly for a public relations purpose. What you might better have said was that you had developed a process which would reduce unit costs by perhaps as much as 17 per cent by making certain men ten times more productive. And then point out what that means. Lower cost, lower price, increased sales, more jobs, better job security for all.

Stockholders

Take stockholder relations. Suppose you have finally sold the management on a research program to cost a dollar per share per year. Is that the way to say it? Heavens, no! Point out rather that the long range prosperity of any competitive enterprise today rests with ceaseless research, to improve present products and ways of making them, and to develop new products for the expansion of the business with broader and more profitable markets. Proceed from the general to the particular by revealing the fact that *your* stockholders' management in earmarking a dollar per share per year for research has taken the most positive step possible to safeguard the continuing value of the stockholder's property and its income producing ability, while at the same time laying the groundwork for an increase in both during the years ahead.

Customers

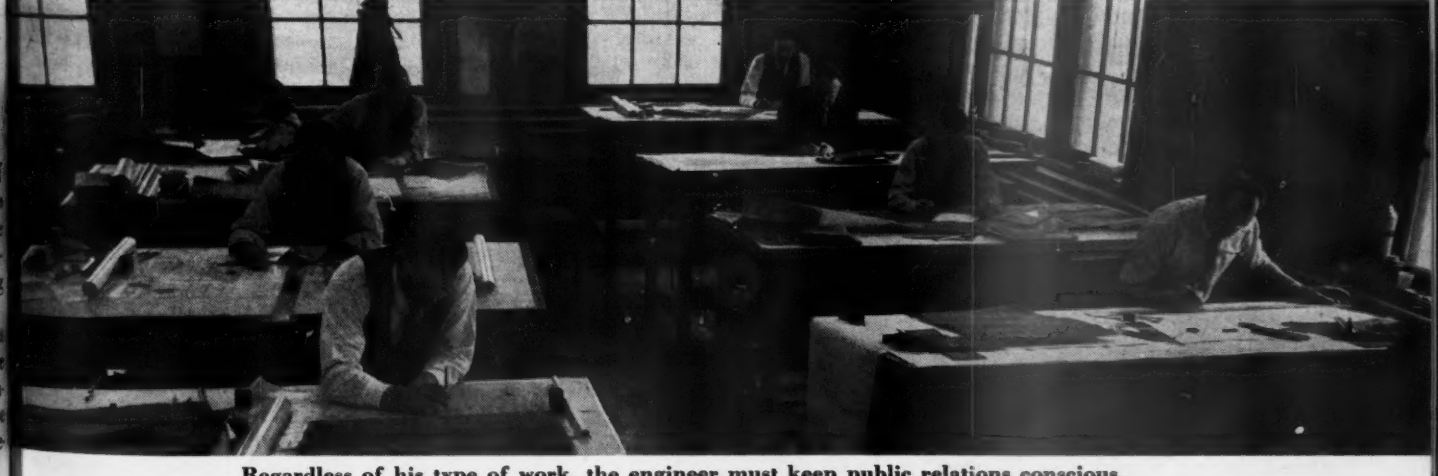
When an engineer has an opportunity to influence a customer, he is dealing with the most basic stuff of which business success is built. A customer may buy from your company today for any of a thousand reasons which may not be compelling tomorrow. But a customer who develops a friendly feeling toward your company is not only predisposed to continue buying from you, but will longer resist any temporary sales advantages proffered by your competitors who have not developed in him an equally friendly regard.

And unless you realize that whatever you may say in a casual conversation in a club car, hotel, or private club, may be heard by a potential customer, your lack of awareness of the principles of public relations may work incalculable good or harm to your company, your client, your profession, and ultimately yourself.

Suppliers

To question the importance of establishing and maintaining good public relations with suppliers is to ignore the painful problems of the past decade in obtaining what you needed, in the quantity and quality you needed, when you

(*Continued on page* 34)



Regardless of his type of work, the engineer must keep public relations conscious.

DESCRIPTION OF AN ENGINEER . . .

Although paid on a six-day basis, the engineer works seven days and as many nights a week. An engineer can be identified by his trusting look, the excitement of expression on his face, and the table of sines and cosines carried near his heart.

Through the ages, the engineer has continued to function until new technical schools of our country yield 10,000 young hopefuls into the American public, each armed with a slide rule, two handbooks, and a bad case of brain fatigue due to four years of unremitting toil. Some of those souls are saved by becoming bond selesmen and insurance agents. Some of the remaining souls eventually gain success after working incessantly as engineers by becoming advertising managers, accountants, salesmen, and managing executives. But also they fail and become assistant chief engineers, chief engineers, and if complete failure, consulting engineers.

There is only one engineer on record who has become rich. He died recently in Colorado and left a fortune of $50,000,000. He amassed his fortune by unceasing toil, superhuman perseverance, remarkable ingenuity, and the death of an uncle who left him $49,999,995.

—*Pipe Dreams, February*, 1950.

THE SALARY PROBLEM . . .

Cost of living is continuing to rise. And as cost soar, inadequacies of the salaries of state and county highway engineers, along with city engineers, are becoming more evident even than they were during the war years.

During the past year, news columns of *Mountain Constructor* have reported many times of engineers leaving their positions to take up more lucrative executive positions in jobs outside the construction industry or in many cases to open their own engineer firms.

The calibre of public engineers in highway fields at the present time is at its zenith. This is a situation that started during World War II when governmental units, faced with the prospect of even small revenues, could not afford to keep engineers on their payrolls who weren't giving a dollar's value for every dollar spent.

Today, as the nation faces its biggest construction year in history, it is obvious that the industry faces a serious situation. Unless salaries paid engineers are raised, the calibre of engineers holding public office will drop, and certainly, with lucrative fields in private industry beckoning constantly, these positions will have little appeal for the younger generation of engineers to whom governmental administrators must look for future service.

Salaries of only 20 per cent of the country's engineers amount to more than $3,500 and only six per cent receive more than $4,500 annually. A study conducted by the American Society of Civil Engineers of engineers in private industry, revealed that all chief engineers should receive a minimum of $9,600, principal assistants up to $9,360, division engineers up to $7,920 and lesser posts smaller salaries in proportion. This is a far cry from the actual standards of today.

The usual conservative taxpayer appears to be taking a big risk by not doing something about these low salaries. Right now he has the best engineers in the country building and maintaining better roads and he is entrusting millions of dollars to these under-paid officials for use in the historic-building year of 1950.

If salaries remain low, however, there might come a time when shortcomings in engineering ability will be noted and thousands of dollars will be lost — needlessly. These losses could amount to many times what increases in the pay of today's engineers would be.

One writer suggests that engineers are under-paid, under-esteemed, under-organized and under-publicized, "especially when their status is compared with those of other learned professions." Engineers have already started to band together for collective bargaining purposes, but competent public officials should realize the value of their engineers without initiation of an organized drive. — *From Mountain Constructor, January*, 1950.

ENGINEERS IN WORLD AFFAIRS . . .

Engineers would benefit by many more talks like the one made at the ASCE annual meeting by Nelson A. Rockefeller on the role of engineers in world affairs. Mr. Rockefeller has had wide experience in trying to use American private-enterprise know-how to aid backward countries to help themselves. Some of it has been very costly, and his discussion of the subject was tempered by that fact. He painted no glowing picture of vast and immediate opportunities for American engineers and American capital. The going will be slow. Living standards in any country cannot be raised rapidly, and yet, as Mr. Rockefeller pointed out, it is only by the slow expansion of consumer demand that new and broader opportunities are to be created.

Engineers, he said, played an important part in the expanding national economy that made this country great. They can and probably will play a similar part in the expanding world economy that is so badly needed now. But that expansion can only come through freer world trade, and that means much larger purchases in this country of what the foreign nations we want to help have to sell. Only in that way can we get sufficient dollars into the hands of those whose requirements in this respect have previously been met by our purchase of their raw materials.

There is where the rub comes, and it is well that engineers realize it. They must do their best toward getting the public here to accept that hard fact if the expansion abroad is to take place within any reasonable time. Part of their job in world affairs is to learn to think—and talk—in terms of world economic expansion. — *From Engineering New Record.*

ENGINEERS' RESPONSIBILITY . . .

A recent news article states that M.I.T.'s new 300,000,000 v. Synchroton has passed its first operating tests. What is your reaction to this as a practicing engineer? Probably you only

note it as an item of passing interest for certainly it is no engineering tool which you will use. You may however go so far as to imagine that a few years hence the results of the research done with it will become engineering knowledge and hence perhaps be used by you. Actually each such news item implies a new responsibility to be shouldered by the engineer. Certainly we all recognize that the fruits of scientific research when applied to modern society are both bountiful and dangerous and that some one must accept the responsibility this brings about. As engineers we are prone to shift this to others for we like to pursue the interests of our profession without the incumbrances of responsibility and the moral obligation involved. Many an engineer will argue that this responsibility is not his but how could these both useful and dangerous machines come about if the engineer didn't produce them. All the scientific knowledge produced by scientists can do no good nor harm until it is applied and the application of this knowledge is the engineer's forte. Also without the tools of engineering scientific research would be many years behind the place it has attained. Thus giving the world of man a chance to mature along with his science.

There is yet another reason the engineer should accept his responsibility and that is that he is best qualified to do so. His very training teaches him to take the available facts and material and arrive at the most practical outcome. Today this type of man is badly needed to lead the nations in the direction which will produce the best world for man to live in. We need men as leaders who recognize that pure theory is never practically attainable and likewise utopia. We need men who can make the engineering compromise in politics, men who will study and recognize their raw material for what it is worth and use it most intelligently. We need good engineers in high public office, in the lowly public office and in all the community life. We must accept our responsibility and bring to the world outside of engineering not only the fruits and dangers that result as the practice of our profession but also an engineering approach as to how best to apply these to modern man.—*Journal of The Engineering Societies of New England. January 30, 1950.*

ON BIDDING . . .

Those who would avail themselves of professional services for their personal needs desire competency and integrity rather than make their selections on the basis of cost. This procedure has become the accepted practice in the recognized professions and is working exceedingly well for the individual who needs and receives professional care or help.

Public agencies and officials often try to reduce costs by requesting bids for needed professional services, and accepting the low bidder. The weaknesses in this method are ably discussed in an editorial appearing in the December, 1949, issue of the *Missouri Municipal Review.* We quote in part:

"At this time . . . we are concerned with the employment of certain professional help that all cities require from time to time. We frequently see advertisements requesting bids for engineering or legal assistance—the assumption being that the fellow who places the low bid will be employed. Several years ago we had the experience of a city council advertising for an annual audit. Bids were received and one bid was so low that it was ridiculous. The bidder was incompetent and in fact had been discharged some time previously for that very reason from one of the firms that bid on this job. The Council was placed in a most embarrassing position since the bids and bidders were given publicity in the local papers. The public, not knowing all the facts, was naturally quite pleased with the low bid. It appeared to be a real saving and the higher bidders were unjustly criticised. The writer was forced to tell the council that if they accepted the low bid that he would not turn his books over to the bidder and frankly told them his reasons. Several council members felt that they were being placed 'on the spot.' Actually, however, they had placed themselves in an embarrassing position.

"The result was that the council accepted a much higher bid and the newspapers did not print all of the reasons behind their action. For months that council was criticised for this action. The same situation can develop in the employment of other professional help and no doubt has occurred. We find, however, that most professional organizations are more and more refusing to permit their members to bid on such jobs because the less competent and less ethical will usually underbid them. The result is that cities are going to be paying for a little less that they are entitled to get even for the money that they spend.

"It would appear that city officials should take the same care in selecting professional personnel for their cities that they would take in selecting a personal physician, an attorney, or other professional help that they might need. Certainly they do not ask for bids because they recognize that they want the most competent and not necessarily the cheapest in price since a few extra dollars at that point might well save many dollars later on. In other words the city officials should handle the public business as they would handle their personal business."—*From The Missouri Engineer, January,* 1950.

LICENSING AMONG CHEMICAL ENGINEERS

Recognition of engineering as a profession is making slow but steady progress toward a position comparable to that of law and medicine, according to John M. Weiss, head of John M. Weiss and Company, consulting engineering firm of New York, N. Y.

Speaking before a special session on the licensing of chemical engineers at the 42nd annual meeting of the American Institute of Chemical Engineers recently, Dr. Weiss revealed the results of a recent poll of Institute members on the question of professional licensing.

Every state and territory has laws regulating the practice of engineering. Such laws have been in effect in New York for more than 20 years.

With about 20 per cent of the Institute membership participating in the poll, nearly 50 per cent of the active members replied that they were licensed engineers and more than 70 per cent of the junior members possess the sanction of a state license.

The advantages of securing a licensed status were pointed out and discussed. In New York, for example, civil-service positions involving engineering practice can be filled only by licensed engineers. Civil courts will not hear expert testimony on engineering matters unless the witness is a registered and licensed engineer.

Should an unlicensed engineer take court action to recover fees for professional service, his cause would be dismissed without a hearing. Unauthorized use of the term "engineer" in telephone directories or in advertising material can be prosecuted in courts.

The New York state income-tax laws provide exemptions for members of professions, and licensed engineers are included in the exempt classification. Under the Taft-Hartley Act, professional employees, such as engineers, have the right to form negotiating organizations and can restrict the membership of such organizations to professionals if desired.

(*Continued on page* 33)

TESTIMONY BY NSPE ON HOUSE BILL 6000 BEFORE SENATE FINANCE COMMITTEE

As Given By

Paul H. Robbins, Ex. Director, NSPE

Paul H. Robbins

My name is Paul H. Robbins. I am Executive Director of the National Society of Professional Engineers and I appear before the committee to present the views of our organization on the pending bill to extend and improve the Federal Old-Age and Survivors Insurance System, H.R. 6000.

By way of background, the National Society of Professional Engineers consists of over 21,000 members who are all registered as professional engineers under the various state engineering registration laws. In addition a small number of young men known as engineers-in-training, who still lack the required number of years of experience to obtain registration are affiliated with NSPE. Our membership is affiliated through Member State Societies in 34 states of the union.

The primary interest of the National Society of Professional Engineers in the pending legislation is in connection with the proposed addition of the self-employed to the social security system. Consulting engineers will be affected by the decision on their inclusion or exclusion, and this group has considered the question of their status in the revised legislation at some length. Likewise, the National Society of Professional Engineers has given thought to the position of self-employed professional engineers in the social security system through its Legislative Committee and Board of Directors.

The House of Representatives has, of course, already acted on the pending legislation and in our considered opinion the proposed handling of self-employed professional engineers in the bill passed by the House is altogether unsatisfactory from the standpoint of the profession and from an administrative standpoint. In adding the self-employed the House-passed bill excludes certain professions, such as physicians, lawyers, dentists, etc. In applying this exclusion to the engineering profession the House saw fit to separate the profession by branches and in its present form the bill would exclude those self-employed engineers performing services in the aeronautical, chemical, civil, electrical, mechanical, metallurgical, or mining fields of engineering. Presumably self-employed professional engineers practicing in other branches would be added to the social security rolls. We do not know of any reason for this division of the profession and we are convinced that it will prove to be unworkable and unsatisfactory.

Just as is true of many other professions, the engineering profession is composed of various specialties or branches; yet it is a single profession with all branches having certain basic fundamentals in common. The recognized accrediting agency of the profession for engineering schools is the Engineers' Council for Professional Development and we cite from their list of approved engineering curricula to illustrate other branches of engineering in which degrees are granted and which would not be covered in the present language of the bill. These are: Agricultural Engineering, Architectural Engineering, Ceramic Engineering, Fuel Technology, General Engineering, Geological Engineering, Industrial Engineering, Marine Engineering, and Petroleum Engineering. A self-employed professional engineer practicing in one of these branches would presumably be covered by the social security system while those practicing in the branches set forth in the present bill would be excluded.

One effect of this application would be to make the question of inclusion or exclusion a voluntary matter for the individual. Many engineers are qualified and practice in more than one branch. To illustrate the practical working of the proposed arrangement, a consulting engineer engaged in manufacturing production who desired to be included in the social security system would report as an industrial engineer. Conversely, if he desired to be excluded he would list himself as a mechanical engineer. The same illustration may be made in the case of the engineer engaged in petroleum work. He could hold himself out as a mining engineer and be excluded or as a petroleum engineer and be included. While it may have been the intent of the framers of the bill that the branches not named would be considered subdivisions of the basic branches we strongly feel that this will prove to be impossible of sound administration and arbitrary judgments would have to be made in placing certain branches under one of the basic branches. In addition, there are fields of engineering, not named in the bill, which cannot logically be placed under any of the older basic branches. This is especially so in the newer fields of engineering which are coming to the fore in our rapid modern technological development. An illustration is the growing field of plastic engineering. Other instances would be agricultural engineering and ceramic engineering.

After reading the report of the House Committee on Ways and Means and the various comments of experts in the social security field we are sure that it was not the desire of the House Committee to make the addition of the self-employed compulsory in all cases except that of engineering. Yet that is one of the effects of the bill as it now stands.

Another inconsistency in the present situation is the complete exclusion of doctors, lawyers, dentists and other professions, the partial exclusion of the engineering profession and the complete inclusion of other professions. A profession closely allied with engineering is architecture. Presumably all self-employed architects would be included. We do not presume to speak for or even indicate the desires of the architects in this question but the comparison does raise another point of difficulty in applying the proposed law. It is not uncommon for an individual to be

both an architect and an engineer and to practice both professions at the same time inasmuch as they have a very close relationship and intertwining. In these cases the choice would again be left to the individual. If he desired to be included he would report as an architect and if he desired exclusion he would report as an engineer under one of the branches listed in the bill. It would raise an interesting administrative situation if some rugged individualist engaged in both professions insisted that he was in that situation and did not think it possible to make a choice between one or the other. Part of him would be in and part of him would be out. Perhaps our able administrators could work out a formula to cover such special cases but we feel that these inconsistencies should be avoided. Enough has been cited, we believe, to make a point which we feel is fundamental—that the engineering profession's members in self-employment must be treated as a single group. Either all self-employed professional engineers should be covered or they should all be excluded.

MAKING a choice between these two opportunities has required a careful weighing of the advantages and disadvantages. Certain problems are inherent in the profession field which may not be true in other fields of self-employment. The primary consideration is the benefit to be derived upon reaching retirement age of 65 against the contributions to be paid into the fund. Of course, the primary benefit is the monthly payment after the age of 65. As is true in many other professions the average self-employed engineer does not retire at that age if he is still in good health and able to continue his practice. Many of our more successful and eminent consulting engineers are well past that age. Such persons would not receive monthly benefits because their earnings from such practice would far exceed the income limitation of $50.00 per month or $600.00 per year. Even those who continued their practice on a limited part-time basis could be expected to earn more than $50.00 per month. We recognize that there are other benefits in the system such as death benefits and monthly benefits to widows under certain circumstances. However, weighing these against the probability that most self-employed engineers would not receive monthly benefits, it is our considered opinion that self-employed professional engineers should be excluded. We, therefore, recommend to the Committee that the pending bill be amended by striking out the following words on page 57, lines 4, 5, and 6 and such other places in the bill as may be applicable: ". . . an aeronautical, chemical, civil, electrical, mechanical, metallurgical, or mining engineer . . ." and substituting therefore the words, ". . . a professional engineer . . ."

The words, "Professional Engineer" have a definite well-established meaning recognized in the law and will provide a solid practical base for administration. Every state in the union has an engineering registration law and "Professional Engineer" is the common title applied to those who have demonstrated their qualifications under the state laws and accordingly have been issued certificates authorizing their practice before the public. Under these state laws a person may not lawfully offer his services in a self-employed consulting capacity unless he is registered. In this situation the administrator will have no difficulty in applying the exemption, just as will be true in the medical and legal professions.

It is our sincere belief that this recommendation will result in a sounder bill and will eliminate the confusion of administration which is bound to result from the present language of the bill.

If we may be of further assistance to the committee in answering questions or supplying further information and data we shall, of course, be glad to do so.

(*Editor's Note: As we go to press, information from the Committee indicates that several additional elements of Social Security legislation have been proposed since the above testimony was presented. These additional proposals are being weighed by NSPE's Legislation Committee in considering their affect on self-employed engineers.*)

ECPD RELEASES 17th ANNUAL REPORT

THE Seventeenth Annual Report of the Engineers' Council for Professional Development gives an encouraging across-the-board picture of what the Engineering Profession is doing to improve the competence of its members and to make engineering work more rewarding in personal satisfactions. For this reason the 47-page recently published document deserves a careful reading by all engineers who are interested in the betterment of the profession.

In the lead article, J. W. Parker, retiring ECPD chairman, calls attention to the following progress achieved during the past year:

1. The Pre-Engineering Inventory, a battery of tests for aptitude and achievement developed under ECPD sponsorship, was placed on a self-supporting basis and made more accessible to guidance counselors and persons desiring to be tested.

2. Accrediting of engineering curricula was continued and a program to establish minimum standards of content of engineering curriculum was initiated.

3. In the field of professional training steps were taken to establish a 7-point program directed toward extension of educational processes into the period following graduation. The plan envisages an organized program for continuing engineering education into and through the years of active employment.

4. With regard to professional recognition the Council adopted uniform nomenclature for designating the several grades of membership in constituent societies and established minimum standards for admission to the respective grades.

5. The Council's Canons of Ethics for Engineers was widely adopted by engineering organizations having an unduplicated membership of 100,000 engineers.

6. ECPD's publications, "A Professional Guide for Junior Engineers" and "The Second Mile" by Dr. Wickenden, were called to the attention of practicing engineers through news releases and advertisements in the journals of constituent societies.

An important part of the report is the lists of accredited undergraduate engineering curricula and programs of technical institutes. Seven pages are devoted to officers, representatives of constituent organizations, and committee personnel who carry on ECPD programs. Included in the report are the "Canons of Ethics for Engineers," and the credo, "Faith of the Engineer."

Copies of the report can be obtained from ECPD, 29 West 39th Street, New York, N. Y. Price per copy is 50 cents.

Two Famous Technical Schools Emphasize Social Relations Curriculum

Carnegie Tech

Carnegie Institute of Technology has received a $100,000 grant in support of its pioneering educational plan, President Robert E. Doherty announced recently.

The grant, made by the Carnegie Corporation of New York, will be given the school in three annual installments to help develop its Carnegie Plan of Professional Education, specifically in the College of Engineering and Science, Dr. Doherty said.

"The generous gift is not an addition to our endowment," Dr. Doherty emphasized. "It is, instead, current money which we will use in the next three years in further developing our Plan."

The Carnegie Corporation of New York has no direct connection with Carnegie Institute of Technology.

Until 1946, the Corporation was a parent body for the School. But in that year, in accordance with long-range objectives set up in 1921, the Corporation increased the Carnegie Tech endowment by eight million dollars and, at that time, ended its responsibility toward the school.

Since then, Carnegie has had to compete for Corporation funds on the basis as any other institution.

In commenting on the $100,000 gift today, Charles Dollard, President of the Corporation, said it was "granted enthusiastically."

He remarked that the gift represents "in a real sense a tribute to Dr. Doherty's accomplishments and a vote of confidence in President-Elect Dr. J. C. Warner, who will take over when President Doherty retires this year."

Among the Carnegie Corporation board members who voted the grant in New York recently were Dr. Vannevar Bush, internationally known scientist; Leroy Wilson, President of American Telephone and Telegraph company; and Dr. Thomas S. Arbuthnot, President of the Carnegie Hero Fund Commission.

The Carnegie Plan, which Dr. Doherty began to build at Carnegie 14 years ago, equips a student to develop from later experience what he needs to do his job well and to live an intelligent life as a person and a citizen.

In developing its Plan, Carnegie changed how it teaches and what it teaches its students in both technical and non-technical—or social relations—courses.

Last year the social relations side of Carnegie's program received a $45,000 grant similar to the one announced for engineering and science.

Case Institute

A new and more liberal engineering curriculum is Case Institute of Technology's answer to the demands of industry and the engineering profession for engineering graduates with a broader general education. Cutting boldly across departmental lines, the new program stresses the student's humanistic-social background, and provides four-year emphasis on his ability to express himself clearly and effectively in writing and speech.

The new Case curriculum is the result of two years of intensive study by the entire Case Faculty, large bodies of students and alumni, and consultants from the industrial and educational world. One result of this "Self Survey" is the creation of a new freshman course in "The Background of American Democracy" and a two-year course beginning in the sophomore year, entitled "The History of Western Civilization." In addition, a remedial English program has been started.

"The Background of American Democracy" course, required of all freshmen, has as its goal the comparison of American democracy with other systems of government. From a study of the individual citizen and the forces —historical, economic, religious, political, literary, sociological, and psychological — which combine to make him what he is, the course proceeds to an analysis of Americans as groups and as a nation.

Integrated closely with this course is the course in "The History of Western Civilization" which all students will take from the sophomore year until graduation. In it the student will study the heritage of economics, science, art, religion, music, politics, literature, and similar forces which have shaped men's lives since ancient times. Former separate courses in history and literature (with their artificial boundaries) have given way to a broader unified pattern.

For example, a sophomore class in "The History of Western Civilization," looking into the character of The Renaissance, might in a consecutive series of lessons read and discuss Machiavelli's *The Prince*, debate the aesthetic qualities and influence of Cellini's sculpture, study the mechanical details of Da Vinci's military engines, listen to the music of a Palestrina Mass, survey the condition of the small businessman in the Italian city-state and the English town, and analyze the interdependence of church and state in the various countries of western Europe.

LEGISLATIVE REPORT

Approximately 200 representatives of national private organizations met at the State Department in February to participate in a national conference on problems of United States foreign policy, particularly in light of the impending tenth session of the Economic and Social Council of the United Nations.

NSPE was among the organizations attending the conference along with other engineering organizations and representatives from such diverse groups as aircraft manufacturers, social welfare organizations, women's groups, and religious bodies. While the program covered the entire agenda of the Economic and Social Council, the main emphasis and interest was in the Point Four program to provide technical assistance to the underdeveloped nations of the world.

The conference received a thorough statement on this subject from Willard L. Thorp, Assistant Secretary of State for Economic Affairs, in which he detailed the latest thinking of the U. S. Government on Point Four and its relationship to the UN. This phase of Point Four constituted a reminder of a fact often overlooked in current discussion—that the Point Four program is envisioned as an international program through the UN and not merely as a U. S. enterprise. Naturally, the pending legislation to establish the basic authority for U. S. participation in such an endeavor has held the center of domestic attention. At the same time it has been intended by those proposing the Point Four program that it be handled through the United Nations, and other international organizations, as well as through U. S. governmental sources. The pending Kee-Herter bill, representing the latest lgislative thinking on the subject, states that the participation of the United Nations, the Organization of American States, and their related organizations and of other international organizations shall be sought wherever practicable.

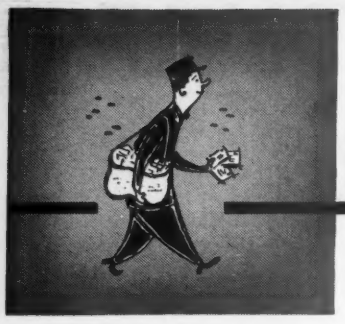
As explained by Thorp, the intention is to channel as much Point Four activity through the UN and other international bodies as possible. At the same time he pointed out that these agencies have their limitations in the program and U. S. participation through that means will be limited to a reasonable portion of the total funds allocated by all the countries participating. While the U. S. will undoubtedly make the largest single financial contribution, he said, it is not considered desirable to have the U. S. share so large as to predominate the program completely and turn it from one of international concept to that of a single country.

There is no inconsistency in this policy, however, with that of a separate U. S. program of technical assistance, he pointed out. The U. S. will cooperate and contribute as much as possible in line with the policy stated above. Beyond that it will conduct additional programs which will complement and not compete with the international body. Just where the division of funds will lie between the two programs will depend, to a large extent, on the contributions made by other nations. Another point often overlooked, Thorp said, is that nations receiving assistance will be expected to make return contributions to the fullest extent possible. It is the desire of those shaping the program to make it as fully as possible a two-way street.

The discussion by State Department leaders, and at the roundtables in which the delegates participated, indicated that the first phase of Point Four will necessarily have to be in the form of technical training and pilot projects. Large scale industrial projects and capital investments present special problems, Thorp pointed out, and he indicated that it is not contemplated that the U. S. will provide the funds for factories, mills, and other large industrial developments.

Another important indication by State Department representatives at the round table discussions was that the State Department will oppose the ideas of some representatives that Point Four be used as a weapon to force social reform in backward countries. If social reform instead of technical assistance became the objective the program would be resisted and would fail, it was said.

The conference emphasized the great amount of interest in the Point Four idea by representative groups of citizens and pointed up the numerous problems involved before very many definite answers are found. That the engineering profession is being represented as these problems are discussed at high level is significant in developing the technical program on a sound engineering basis.



TO THE *Editor...*

Ban On Controversy?

Dear Editor:

It seems to me that such articles as those by Mr. Simmons (To Be Let Alone, AMERICAN ENGINEER, January '50) and Dr. Lowance (Same issue) are much too controversial for publication in our magazine. These articles center around problems that most people have formed an opinion upon, and it strikes me as being a waste of space to publish them in the ENGINEER.

Why not have more real professional articles and less propaganda?

E. V. HART,
Chicago, Ill.

Sweet Music . . .

Dear Editor:

While I am in the letter writing mood, I wish to express our sincere appreciation for the marvelous appearance and the "New Look" of the AMERICAN ENGINEER. It is now a publication we can all be proud of.

EDGAR A. HARTY,
President, Mass. SPE,
Marblehead, Mass.

Dear Editor:

. . . should like to take this opportunity to say that the AMERICAN Magazine has vastly improved, and is indeed a credit to the NSPE and state chapters.

KENNETH L. BELLAMY,
Editor, New Mexico Engineer and Contractor,
Albuquerque, N. Mex.

Dear Editor:

. . . the article on Civil Defense appearing in the February issue was a splendid presentation of the situation and I compliment you upon its thoroughness.

COL. CHESTER LICHTENBERG,
Ft. Wayne, Ind.

Dear Editor:

. . . the January issue of the AMERICAN ENGINEER was an outstanding one.

EDWARD L. REITER, Sec'y.
Chicago Chapter, ISPE,
Chicago, Ill.

Glidden Himself . . .

Dear Editor:

Regarding comment on my article "An Engineer Gazes Into His Crystal Ball," (AMERICAN ENGINEER, Oct. '49) I must say that if Mr. Joseph F. Daley attributes the woes of this world to "the present administration," it is his own conclusion. Could it be that he is opposed to the doctrine of the brotherhood of man? Does he mistrust the orderly, reliable processes of the universe?

I deeply appreciate the hundreds of expressions of approval including letters published by you, letter addressed to me personally and voiced comments by many others. Are we all out of step 'cept Joe?

WM. ROY GLIDDEN,
Richmond, Va.

Washington Story . . .

Dear Editor:

The February issue of the AMERICAN ENGINEER has just come to hand. I have read with much interest the fine article "Washington Worked Here," author not given, but perhaps from your pen.

Last year at this time, the enclosed biography was presented by Engr. Fred W. Fisch at our Suffolk County Chapter meeting, and I am forwarding this copy as a companion piece to what is in the ENGINEER. We were particularly impressed, from Mr. Fisch's account to learn that Washington was in reality the first duly licensed Professional Engineer in the nation, and that he got his license the hard way, i.e. by examination at the hands of the faculty of William & Mary College, in the then State Capital of Virginia, Williamsburg.

In these days when there is so much dissent in the profession as to the advisability of having a "Grandfather Clause" in the licensing laws, it is also interesting to note that Washington, though still of relatively tender age at the time, met the challenge of appearing before an examining board and proving his worth.

FRED J. BIELE,
Past-President, Suffolk Co., Chapter, NYSSPE,
Huntington, N. Y.

► ***We did, indeed, find the biography on Washington as submitted by Reader Biele of great interest. So interesting in fact that it should form the basis for another more comprehensive, story on our First Engineer in a future issue.— Editor.***

Engineer Executives . . .

Dear Editor:

It is true that more and more of the leading heads of American industry are engineers. I believe that at least two-thirds of the manufacturing executives of our industries are now engineers and the percentage is increasing. Only a few weeks ago, I had the pleasure of visiting the Gorham Manufacturing Company, manufacturers of silverware. Its engineering executive is Elliott Gordon, a mechanical engineer, who is slated to be President of the entire organization. Naturally, organizations such as the Bell System, the electrical manufacturers and the public utilities have practically all engineers as their executives.

I thought the above might be of interest to you. May I again tell you how pleased I am with the appearance of the magazine.

A. A. POTTER,
Dean of Engineering,
Purdue University,
Lafayette, Indiana.

Must Reading?

Dear Editor:

Food Industries, on pages 62-64 of their January issue, have published an article which 99.999% of our readers should take in. All that is needed is replacing the words "food technologist" whenever it occurs in the article, with the word "engineer." Presto! You have the most befitting article for our readership.

SIEGFRIED RUPPRIGHT,
Los Angeles, Calif.

Around The Nation With Our Members

Griffiths Dies At Idaho Home

John Henry Griffiths, prominent engineer in this area, died at his home in Caldwell, Idaho, recently.

Griffiths, known as an engineer "active in the hard working end of the engineering business" had been active in developments in this area for many years. He was born April 4, 1891, at Colby, Kan. The family came to Idaho in March of 1896 from Edmonton, Canada, where it had resided for one year. He attended Caldwell schools, graduating from the high school here in 1912. He homesteaded south of Lake Lowell, then studied civil engineering under Fred McConnell. After completing a correspondence course in civil engineering he became a partner of McConnell in a business association which lasted for 15 years.

He was at one time secretary of the state board of engineer examiners, was active in the Idaho Society of Engineers, and the National Society of Professional Engineers.

Among the projects in which he participated was the field work in conjunction with the original survey of the I-O-N highway; reconnaissance work in the early stages of the Owyhee project development; the sewer system and disposal plant at Nyssa, Oregon; the water supply at Shoshone, Idaho; and the laying out of the laterals and ditches for the Gem Irrigation district.

Emerson Stresses Professionalism at Atlanta Meet

At the Annual Meeting of the Atlanta Chapter of the Georgia Society of Professional Engineers, Vincent F. Waters was succeeded as President by Paul Weber.

Cherry L. Emerson, Vice-President of the National Society of Professional Engineers, was the principal speaker.

Mr. Emerson, Vice-President of the Georgia Institute of Technology, stressed four particular points of informative advice to the Professional Engineers, among them being the advisability of the young engineers affiliating themselves with the National Society of Professional Engineers through its State Society, promptly after his graduation, becoming Engineers-in-Training until qualifying and becoming Registered Engineers.

Mr. Emerson also brought forth the numerous reasons for becoming Registered Engineers and joining the State and National Society of Professional Engineers. He especially emphasized the importance of Professional Engineers becoming more social-minded and mingling with the public on numerous occasions, to the advantage of themselves, and also to the Engineering Profession as a whole. By doing so, after becoming Registered Engineers, they would benefit themselves in many of the following ways: By the Public obtaining a better understanding of the professional status of the Engineer; by personal improvement; by professional responsibility and professional consciousness; by obtaining official status, unity of profession, and realizing personal improvement.

Maumee Valley Chapter, OSPE, Hear Veinott

The January meeting of the Maumee Valley Chapter, O.S.P.E., was held in the Transportation Room of the Hotel Kirwan in Lima on Friday the 27th. This was the second joint meeting with the Lima Subsection of the A.I.E.E.

Cyril G. Veinott spoke on the subject "It Takes Two Legs to Walk; Two Wings to Fly." Being A.I.E.E. vice-president in charge of the Middle Eastern district, a Fellow in the Institute, and a member of Maumee Valley Chapter of the O.S.P.E., the speaker attracted a large crowd.

Indiana Meeting Called 'Best Yet'

The Indiana Society recently held the largest annual meeting in the history of the organization. Two of the many high-spots are shown in the photos below. On the left Congressman Andrew Jacobs addresses the engineers at a luncheon meeting. In the picture on the right, Professor Wilkinson, Rose Polytechnic Institute, presents Engineer-In-Training Awards to outstanding engineering graduates.

Author At Cleveland Meet . . .

More than 200 members of the Cleveland Society of Professional Engineers and their guests heard the famous author Frank Siedel address the Fourteenth Annual meeting of the Society. Siedel, author of the radio program, *The Ohio Story*, spoke on the subject "Ohio Rediscovered."

Other activities included the installation of newly-elected Paul A. Harlamert (see photo on left) as president for the coming year. In the photo, Harlamert, left, is handed the gavel by retiring president, Ray Freese.

In the photo on the right, Arthur F. Blaser, left, receives the Sixth CSPE Citation ever to be awarded from Sol Bauer, Society Historian, and one of the founders. Blaser, retired engineer and educator, was recognized for his distinguished career and lifetime of service to the profession. Blaser had been on the faculty of Case Institute of Technology, a consulting engineer, and then Chief Engineer of the Cleveland Railway Company. He retired in 1947 as Director of Research for the Cleveland Transit System.

Presentation of three service awards for 1949 also took place. Recipients were: Jack B. Scalzi, for his work in editing the *Cleveland Engineer*; Frank S. Palocsay of the Membership Committee; and Edward D. Lootens for editing the Membership Roster.

500 At Oklahoma Gathering . . .

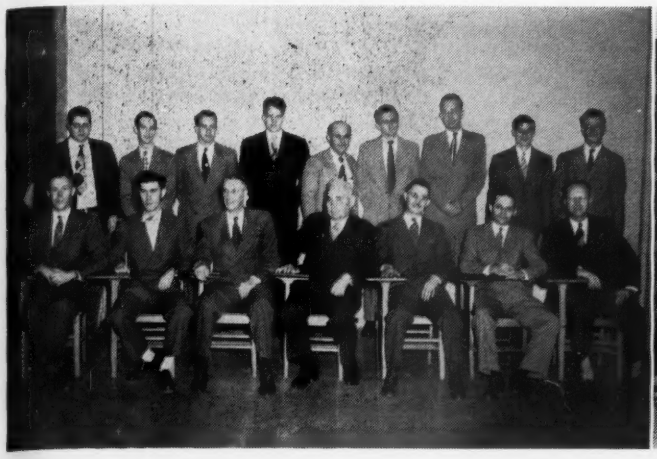
The Fifteenth Annual Meeting of the Oklahoma SPE was held in Tulsa, January 13 and 14. With an outstanding attendance and program, the convention was described as the finest ever held. More than 500 engineers and their ladies were present.

Speakers, who spoke at various luncheons and dinners, included A. L. Soliday, professional engineer, and Executive Vice-President of the Stanolind Oil and Gas Company of Tulsa; Chas. V. Millikan, Amerada Petroleum Corporation, and Chairman of the Oklahoma State Board of Registration; and Dr. Curtis Wilson, Dean of Engineering at the Missouri School of Mines.

Wilson told the engineers that "the professional engineers of Oklahoma are setting a national pattern for leadership in state and community-supported undertakings." He especially pointed out the work of the governor's advisory engineer committee in obtaining the new $36,000,000 bond issue for improvement of state institutions.

Photo above (left) shows new OSPE officers for '50. They are, l. to r., Cy Perkins, Sec'y.-Treasurer; Fred W. Fellows, 1st V. Pres.; and Allan Craig, President; R. F. Danner, 2nd V. Pres. On the right are the newly elected directors of the Society. They are, l. to r., L. L. Dresser, L. M. Limpus, Floyd Zook, G. W. McCullough, and Herbert L. Jones.

Missouri Educators . . .



All Missouri Mines Teachers Members of Society

The Missouri School of Mines and Metallurgy has a civil engineering department that is probably in a class by itself. Here's why. Every one of the members of the teaching staff of MSM's Civil Engineering Department is a member of the Missouri Society of Professional Engineers and are registered professional engineers, or are enrolled as engineers-in-training.

Engineering educators are in key positions to influence their fellow engineers and their students for the good of the profession. When a big majority of our engineering educators have demonstrated their own attitudes and qualifications for professional leadership, they can wield greater influence for their professional advancement.

Pictured above in the photo on the left are members of the instructing staff. Top row from left: C. D. Muir, Instructor; H. W. Nunez, Instructor; J. H. Senne, Instructor; D. L. Dean, Instructor; T. H. Whitfield, Instructor; J. L. Laumand, Instructor; J. J. Trace, Instructor; R. A. Rapp, Instructor; J. F. McCarthy, Instructor. Bottom row from left: W. F. Wagener, Instructor; J. K. Roberts, Instructor; E. W. Carlton, Professor; J. B. Butler, Professor and Chairman; C. W. Eshbaugh, Assistant Professor; L. Hershkowitz, Assistant Professor; V. A. C. Gevecker, Associate Professor.

California Annual . . .

Bay Area Chapter Meet In Oakland

Heavy rains failed to dampen the spirits of those attending the Second Annual Meeting of the Bay Area Chapter, California SPE.

Following a dinner and clever entertainment, officers for the new year were installed. They are: Douglass R. Judd, President; I. H. McCarty, V. Pres.; J. L. Trebilcock, Sec'y. Treasurer; H. J. Fitzgerald, State Director; and Larry Osborn, Harold Johnson, and D. J. Lucchetti, members of the Executive Committee.

General view of the dinner in photo on right pictures around far side of table, F. Meyers (standing), C. Bazille, J. L. Trebilcock, D. R. Judd, R. D. McCoy, E. N. Holm, and B. Kline.

Wax, NYSSPE, Named Engineer of Month

The Brooklyn Engineers' Club has selected their president as the Engineer of the Month. He is Leslie Wax.

Mr. Wax is a graduate of the Polytechnic Institute of Brooklyn. He was with the Board of Transportation on the Fulton St. subway and the N.Y.C. Tunnel Authority on the Brooklyn Battery Tunnel. With T. Frederick Jackson, Inc., Electrical Contractors, he served as estimator and then project supervisor. During World War II, he was in charge of many large projects including two large shipyard installations.

After the war was over, he became a consulting electrical engineer, designing the electrical systems for a number of schools, institutions, industrial buildings and commercial installations.

Mr. Wax has been active as a Director of Kings County Chapter of the NYSSPE, is present Chairman of their Membership Committee, is on the Executive Board of the Association of Electrical Construction Engineers, and has been active on the Club Entertainment Committee for several years.

In Connecticut . . .

A photograph of the head table at the record State Meeting of the Connecticut SPE is shown above. From l. to r. are: L. M. Reed, 1st Vice Pres.; Mrs. A. G. Mallis; J. G. Phelan, 2nd V. Pres.; Mrs. G. L. Mylchreest; Paul H. Robbins, Ex. Director, NSPE; G. L. Mylchreest, President; Mrs. Reed; Prof. Smela of N. Y. U.; Mrs. P. J. G. Phelan; Col. James Skinner, National Director; Miss Mary Phelan, and Major A. G. Mallis, Secretary.

Silver Anniversary Issue of Illinois Engineer Officially Dedicated to H. E. Babbitt

The *Illinois Engineer* is just completing twenty-five years of publication and that fact is being marked by making the current issue the Silver Anniversary Issue. It so happens that State Secretary-Treasurer Babbitt is, also, completing twenty-five years of service to the Society in his present office and the members of the Board of Direction have enthusiastically directed that this Silver Anniversary Issue be dedicated to him as a small expression on the part of the Society of the debt it owes to him for many years of generous service.

The editors said: "No member has ever given such unstinted and devoted service to society welfare. He has watched over its finances to see that the funds were spent to the best possible advantage of all the membership. that matters of society welfare should be provided for in the order of their importance, but above all, that the Society should be kept solvent. He has been in the van of the thinking in the ever expanding accomplishment of society objectives, the social and economic welfare of the engineer. He has been the mainspring in so many society activities that it is impossible to record them all, but, on the other hand, unnecessary because they are so well known."

"When you think of the Illinois Society of Professional Engineers you think of Babbitt." That statement has been made so often throughout the membership of the Society that it has become axiomatic. Oh, he has his faults. But his good qualities so far outweigh his bad ones that we love him because of and in spite of them."

"And so, Professor Babbitt, we cordially and respectfully dedicate the Silver Anniversary Issue of the *Illinois Engineer* to you with the hope that you will be willing to give many more years of service, ripened by experience, to the affairs of the Illinois Society of Professional Engineers."

Riedel, former NSPE Prexy, Honored By Cooper Union

John C. Riedel, chief engineer of the Board of Estimate, New York city, and former president of NSPE, was honored recently at the Founder's Day dinner of the Cooper Union Alumni Association as the graduate "who has done the most for the city and the school." He received a medal from Dr. Gano Dunn, president of Cooper Union, and William Goldsmith, president of the alumni group, read the citation. The dinner took place at the Park Sheraton Hotel.

In his tribute to Mr. Riedel, who also is chairman of the Traffic Commission, Dr. Dunn said: "You have made your life the fulfillment of Peter Cooper's expressed wish for all of his adopted sons and daughters who have been graduated or who are to be graduated."

Harvey W. Corbett, former senior architect for Rockefeller Center discussed the effect of the atomic age on architecture.

Mr. Goldsmith also presented a check for $10,000 on behalf of the alumni for Green Engineering Camp, the school's educational and recreational area in the Ramapo Mountains. The gift was accepted by Dr. Edwin S. Burdell, director of Cooper Union.

Gov. Dewey Establishes Engineers' Week In New York

Governor Dewey of New York recently proclaimed the week of February 19-25 to be celebrated within the state as Engineers' Week. His statement follows.

"The people of this State and Nation owe much to the professional engineers whose creative genius has made possible the industrial might which has produced the high standard of living we now enjoy. They have designed and built the great networks of roads and railroads and also the airports of the Nation. They have advanced the efficiency of the equipment which operates on these traffic arteries which are so vital to the economic well-being of the people. Through their efforts the general health and welfare of all the people, and especially those of our great cities, have been materially advanced.

"The members of this great profession in New York will celebrate February 19-25 as Engineers' Week, that being the period which comprises the anniversary of the birthday of George Washington, the first and most famous engineer in our history.

"This celebration will be particularly timely this year in which we are being dramatically confronted by two great public problems whose solution will require all the talents of the engineering profession. I refer, of course, to the need of some of the larger communities in New York for more adequate water supplies and to the urgent necessity of bringing to an early halt the pollution of our inland waters. With the help of our engineers, I am sure we shall succeed."

Traffic Engineer Speaks Before Cincinnati Chapter

George W. Howie, traffic engineer for the city of Cincinnati, was the guest speaker at a recent meeting of the Cincinnati Chapter, Ohio SPE.

At the outset Mr. Howie attempted to define the term "traffic engineer" and described the evolution of the activity from early day gadgeteering to its present scientific level. Originally traffic engineering had to do with the erection of signs and some mechanical and electrical devices. Today this has grown to an exact science, particularly when the theory of probabilities is applied to traffic . . . this in combination with studies of the various patterns at the many intersections. Ultimately this should lead to fundamental laws and traffic guidance.

Much attention and discussion is focused on the human element in traffic, particularly the driver and pedestrian. The motor age being only 50 years old as compared with centuries old humanity makes for maladjustment. Humanity has not adjusted itself sufficiently to the motor age. Efficient transportation is the goal and movement of traffic with safety does not necessarily imply that sacrifices are necessary in all categories but there should be a specific and sound relation. The benefits to be derived are principally saving lives and suffering. The economic benefit is considerable. The annual accident bill in Cincinnati is estimated at $3,000,000 while the insurance bill is estimated at $5,000,000.

Okla. Governor Commends OSPE

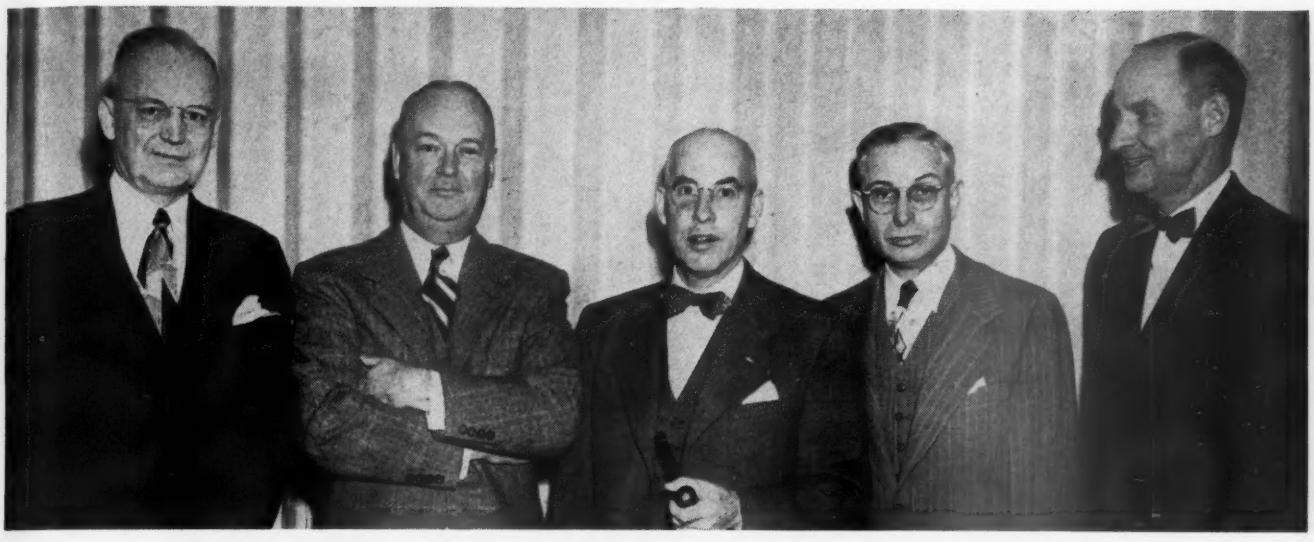
Governor Turner of Oklahoma recently commended the O.S.P.E. for the outstanding work it had done on a proposed state-wide building program. The Governor's statement to M. B. Cunningham, president of the Society, follows:

"Now that the special session of the Legislature has ended and all legislation necessary for the $36,000,000 building bond program was approved, I wish to express my deep appreciation to the Oklahoma State Society of Professional Engineers for the assistance it gave in helping us formulate our program to submit to the Legislature.

"This type of service which lent so much prestige to the advancement of a worthy undertaking, cannot be valued in dollars and cents.

"We shall always be grateful for the fine public service you have rendered our state."

Plant To Head Michiganders . . .



Here are the newly elected officers of the Michigan SPE. They are, l. to r., Prof. Dudley Newton, Treasurer; President A. F. Plant; B. P. Harrison, Secretary; H. N. Barnard, 2nd Vice President; and Paul Caulkins, 1st Vice President.

Meeting Held at Lansing

Arthur F. Plant, President of the Austin Engineers, Inc., Detroit, since its incorporation in 1942, was installed as the fourth President of the Michigan Society of Professional Engineers. This meeting was held at the Michigan State College Union in East Lansing on Saturday, January 21st. The President-elect, S. L. Stolte, of the National Society of Professional Engineers represented the National organization and outlined its aims and plans for 1950.

Other guest speakers were Professor Donald Phillips, Head of the Adult Education Department of Michigan State College, who talked on "Conference Technique"; John McCarthy of the Grand Valley Chapter, a member of the Inner-Peninsular Communication Commission discussed the "Proposed Straits Bridge"; Professor James G. Hayes of the Dairy Department of the Michigan State College spoke on Dairy Products and Activities from a humorous standpoint. Toastmasters for the luncheon were Dale W. Granger, Chairman of the Grand Valley Chapter and A. O. Cuthbert, Executive Secretary of the County Road Commission of the State of Michigan. A Ladies' Program provided luncheon, a tour of college buildings and of Lansing shops and the tea in one of the sororities.

First State President, Stephen G. Szabo, Director of Engineering of the Fisher Body Division of General Motors Corporation, presented a certificate of appreciation to outgoing President Professor Hugh E. Keeler of the Mechanical Engineering Department of the University of Michigan.

President Plant resides in Birmingham. In addition to his State Registration as a Professional Engineer, he is licensed in several states and in Ontario. He became a Member-At-Large of the National Society of Professional Engineers in 1944 and assisted in the founding of the State Society in 1947. Following his election and term of office as Chairman of the Detroit Chapter of the M.S.P.E. in 1947, he was elected as 2nd Vice-President of the State Society in 1948 and 1st Vice-President in 1949.

In his address of acceptance of the Presidency, Mr. Plant emphasized the civic responsibilities of the engineers and the appointments of professional engineers to engineering positions of importance in State, County and City Government. An additional program dealing with the legal standing of the professional engineer and his ability to serve the state, its sub-divisions and its business activities was outlined using a State Engineering publication, Speakers Bureaus and newspaper articles to secure the desired results.

Other officials installed were Paul Caulkins of Birmingham as 1st Vice-President; H. N. Barnard of Ann Arbor as 2nd Vice-President; Burton P. Harrison of Giffels & Vallet, Inc., Detroit as Secretary; Professor Dudley Newton, Head of Civil Engineering Department, Wayne University as Treasurer; James H. Foote of the Commonwealth & Southern Co., Jackson as State Director-At-Large; Otto H. Hall of the State Conservation Department of Lansing and Professor Hugh E. Keeler of the Mechanical Engineering Department of the University of Michigan as National Directors; George Ruhling of Lansing as Alternate National Director. Announcement was made that J. H. Nimmo of Birmingham, Michigan, was engaged as Executive Secretary for the State organization.

Miami Chapter Becomes Official Member of FSPE

The Miami Chapter officially became a member of F. S. P. E. with their election of officers at a recent meeting. The Nominating Committee consisted of Parks, Thurston, Nelson, Anderson, Channing, Gould, Lofberg and Dean, reports the following nominations: for President—Dr. Palmer H. Craig, Director of the Electronics Research Laboratory of Miami University; for Secretary-Treasurer—Herbert S. Saffir, Assistant County Engineer of Dade County. Nominations for Vice-President and Director will be from the floor.

Correction . . .

On page 27 of the January, 1950, issue of the AMERICAN ENGINEER, C. A. Joerger was incorrectly identified as Dean of the Evening College of the University of Cincinnati. Dean Joerger is actually Dean of the Engineering College of the University of Cincinnati.

McManmon Speaks at Boston

At the left above is an overall view of the recent gathering in Boston. On the right is the head table. From l. to r. are: N. T. Buddine, Vice Chairman, Met. Chapter; W. P. Saunier, Chairman, Met. Chapter; Brig. Gen. James F. McManmon, guest speaker; and W. F. Ryan, Vice President, NSPE.

General Cites Defense Needs To Engineers

Brig. Gen. James F. McManmon, internationally-known engineer, banker, and economist, urged the engineers of Massachusetts to organize their efforts for the protection of vulnerable points on the New England coast, in an address before the Massachusetts SPE, Metropolitan Chapter.

He said that in the event of a third world war the United States would, from the start of hostilities, be subject to enemy bombing for the first time, and that professional engineers, as designers and builders of our power stations, industrial plants, water works, and other vital services, constitute the group most capable of preparing for such eventuality.

In his speech he emphasized the indispensability of engineers during the last war both in industry and at the front.

ECPD Bibliographies Now Available

Selected bibliographies of civil engineering and aeronautical engineering subjects have been published by the Engineers' Council for Professional Development. The lists have been prepared as an aid to the engineer who plans to continue his studies in civil engineering or aeronautical engineering, or to build a private library in these fields.

Copies of the lists may be obtained from ECPD, 29 West 39th Street, New York 18, N. Y. Price is 25 cents each.

Hartford Chapter, CSPE, Hear News of Steel Mill

"The steel industry is taking New England very seriously," said Philip H. Coombs at a meeting of the Hartford County Chapter of the Connecticut Society of Professional Engineers.

The economic adviser to Governor Bowles said the latter's Steel Advisory Committee has been negotiating "behind the scenes" with the major steel companies about coming in on the proposed $225,000,000 integrated steel mill for New England, and more specifically for Connecticut. The discussions to date "throw out the glib assertions that the mill isn't feasible," he said. "We will have that mill within five years."

"It's a lot like proposing to a girl," he continued. "You don't do it in public, with flashbulbs." He said the steel committee, headed by Clifford S. Strike of West Hartford was a well-balanced group proceeding quietly and "working very hard," in contrast to Massachusetts officials "who have been building their mill in the newspapers."

Mr. Coombs, who set out to prove the mill was both "economically feasible and an asset to Connecticut" was followed by Sidney A. Edwards, managing director of the State Development Commission. Mr. Edwards discussed the impact of the steel mill on the "physical environment" and warned the engineers not to be caught napping on the problems of "planning, zoning, and redevelopment" in the mushrooming steel mill area.

Nevada Society Hears Talk on Switzerland

Committees to serve for 1950 in the Nevada Society of Professional Engineers were named at the meeting of the organization recently at Henderson, Art T. Newell, president, announced.

Serving on the various committees are: L. J. H. Smith, chairman, J. Ray Coulter and Aloysius McDonald on the legislative committee; H. H. Houtz, chairman, George Franklin, Roy Fry on the program committee; A. J. Shaver, chairman, Lloyd Compton and Fred Eaton on the education committee; Sherman Mason, chairman, J. Tiberti and Harlan Brown on the ethics, practice prosecution committee; William Doak, chairman, and A. J. Shaver on the public relations committee, and George Von Tobel and J. Tiberti, delegates and Phil Partridge, alternate, delegates to the Civic Service Federation.

Speaker for the evening was O. J. Scherer, who gave an interesting account of the origin of the Swiss nation, its history, social, economic and technical aspects. Particularly enlightening was the description of the building of the Mont Cenis, Gothard, Simplon and Lotchberg tunnels which gained Switzerland an economic outlet to trade of surrounding nations.

Scherer commented that Switzerland remained at peace during two world wars because of her unique geographical location and to the fact that the Swiss had no great sources of raw materials which the warring nations wanted. He indicated that

the reason for Swiss stability and prosperity is that their imports and exports are almost balanced.

Thirty engineers and guests attended the meeting among whom were J. H. Buehler of Pioche, president, and Fred Clayton, of Reno, vice president of the parent organization, the Nevada State Society; Harold Bishop, president, and Mr. Berry first vice president of the Eastern Nevada chapter at Ely; a Mr. Watwood of the Bank of America and Mr. Colette of St. Louis, Missouri.

Detroit Chapter Launches New Publication

As an outgrowth of the efforts of the Detroit Chapter, M.S.P.E., aided and abetted by assistance and material from the State and National Society, a new medium of communication has come into being with the first issue of the *Professional Engineers News*, the P.E.N.

In the space of three short years, says Roland F. Smith, Editor, a small group of men devoted to their profession and endowed with the courage of their convictions formed the nucleus of what today is the Detroit Chapter of the Michigan Society of Professional Engineers, comprised of approximately 500 members. To these members and to the many registered engineers in this community, the P.E.N. is dedicated so that one and all may know the vital role the engineer of today has assumed for the scientific, economic, and communal life.

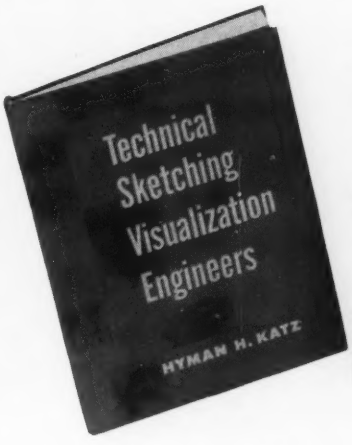
With the belief that the publication will be of interest and value to all engineers, the P.E.N. will be sent each month to approximately 1,500 registered engineers in Detroit and surrounding communities.

It will cover the latest engineering news pertaining to nation, state and chapter activities, and other articles of importance to the professional engineer.

NYSSPE Arranges For Cornell Extension Courses

The Education Committee of the New York State Society of Professional Engineers has made an arrangement with Cornell University's New York State School of Industrial and Labor Relations, which would permit each Chapter to offer courses of general interest to its members and to other engineers. Instructions will be given by the personnel of the Cornell University Extension Service at no cost to the Chapter.

Guides to Advancement



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By H. H. KATZ

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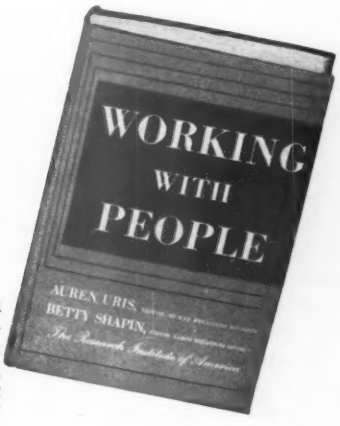
Working with People



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Myers Is St. Louis Head . . .

In the photograph above, George Myers, right, new President of the St. Louis Chapter, NSPE, is shown receiving the gavel from Paul H. Robbins, Executive Director of NSPE. Looking on is Neal J. Campbell, outgoing President.

West Virginia News Notes . . .

Southeast Chapter at Bluefield. The regular dutch treat dinner was held during January. Highlight of the meeting was a short talk by President Frank Watson on objectives and plans for the new year. A goal of at least 25 new members was set. State Director P. K. Pierpont gave a summary of the matters covered at the State Directors' Meeting, just concluded. He announced that a date and place had been set for State Convention—September 1-3, 1950, being the date and the Greenbrier Hotel, White Sulphur Springs, West Virginia, the place.

The meeting was turned over to Vice-President A. L. Johnston who asked C. B. Sykes to present the speaker of the evening. L. W. Scott gave a paper entitled: "The Optimum Size of Rectifiers for Mine Sub-Stations." This paper had been previously prepared for the AIEE and was presented with their permission.

Parksburg Chapter. The regular monthly dinner meeting was held at the Stratford Hotel Dining Room at 6:30 p.m. on Monday, January 30, with President Lewis Palmer presiding.

Mr. Palmer expressed his warm appreciation for the splendid work of the officers and members of committees during the past year and stressed the need of this same cooperation for a successful coming year.

Robert Williamson, State Society President, addressed the Chapter, briefly outlining the formation of the State Society and the local Chapters, and then taking for his theme, "A Changing World." Mr. Williamson's address was thought provoking and inspirational and his visit was deeply appreciated by the Parkersburg Chapter.

Forty-two attended the meeting, including three guests and Ross B. Johnston, State Society Secretary.

Huntington Chapter. Our regular monthly luncheon meeting was held January 14 at the Frederick Hotel. The program was presented by

(Continued Next Page)

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(*From page 26*)

the Standard Ultramarine Company. Hans Brecht introduced the speaker, Doctor F. H. Moser, research chemist, who gave a very interesting talk and demonstration on their products.

Mingo Chapter. David E. Bayer was installed as president of the Mingo Chapter of the West Virginia Society of Professional Engineers at the chapter's annual banquet January 20.

Approximately 80 persons, including wives and feminine guests of the engineers, attended the outstanding dinner and heard a splendid address by James Hamilton, vice-president of the Island Creek Coal Co., and the Pond Creek-Pocahontas Coal Co.

Hamilton used as his subject, "The Future of the Coal Industry," in which he wove an Americanism theme.

He discussed the coal situation and the new developments in the use of coal, and explained how coal is getting in keen competition with oil and gas.

Wheeling Chapter. The Wheeling Chapter held its regular January meeting in the Continental Room of the McLure Hotel on January 17. A dinner, held at 6:30 P.M., preceded the regular business meeting and guests at both the dinner and the meeting included L. A. Fugassi, President of the Weirton Chapter, several members of the Weirton Chapter, and eight practicing engineers from various plants of the Wheeling Steel Corporation. Robert Williamson, Jr., President of the State Society, was the guest of honor and principal speaker. Also present were Ross B. Johnston, State Secretary of the Society, and W. O. McCluskey, Second Vice-President of the State Society and a member of the Wheeling Chapter.

Mr. Williamson gave the principal talk of the evening and stressed the important role the professional engineer plays or should play in our civic affairs. Taking the position that the Society of Professional Engineers was not a political group, he emphasized the need for sound thinking on the part of all engineers whose education, training and experience would enable them to take a sound and active part in local, state and national affairs. Mr. Williamson pointed out the dangers inherent in a totalitarian form of government and indicated that, in his estimation, steps now being taken by our own government leading to the welfare state should be given careful consideration by all engineers in order to preserve the fundamental conception of a free American democracy.

Many Prominent Speakers Address Wisconsin Annual Meet

Several outstanding speakers provided the highlights for the recent meeting of the Wisconsin SPE in Milwaukee.

At one luncheon gathering, Dean M. O. Withey, Dean-Engineering College, University of Wisconsin, spoke on "What Appears Ahead in Engineering Education." He first discussed the future demands for engineers stating that with the June graduation of 1950, the urgent needs of the larger industries will have been satisfied. It should be noted, however, that reports at the meeting of the Land Grant College Association in October indicated practically complete employment of the engineering graduates of last June.

Reports from the Federal Office of Education indicate that the number of engineering graduates of 1950 and 1951 will probably exceed the demand for such trained personnel. Prior to the war this was commonly true, also it has always been true that many engineering graduates find employment in non-engineering work. In consideration of the information available, if normal industrial conditions prevail, it appears that there will be a demand for engineering graduates during the next decade considerably in advance of the pre-war requirements, Dean Withey said.

The speaker for the main banquet was Dr. Carey Croneis, president of Beloit College, who spoke on "Blueprint For Government." Dr. Croneis stated the "Hoover Commission headed by a great engineer handed us a Blueprint for better Government. Engineers should insist that the specifications are followed to the last line."

(*Continued Next Page*)

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(*Continued from page* 27)

During his discussion, he brought out some of the facts and figures of the Hoover report.

He pointed out that some recommendations by the Hoover committee have already been started and that many more should be. Dr. Cary Croneis is a member of both the Wisconsin and National committees on the Hoover Commission findings. He observed: "Scientists and engineers are largely responsible for the modern world but they have shown all too little interest in managing it."

Later, Mr. J. C. Freeman, Manager-Accounting Forms and Procedures at Allis Chalmers Mfg. Co., discussed, "This Is Our Problem." In his talk, he pointed out the American way of life as compared to the Communistic way of life, and pointed out the advantage of our way of life as compared to statehood.

Also on the agenda were three University of Wisconsin professors who described some of the research underway in the Engineering Experiment Station of the College of Engineering and gave a demonstration of an all electronic analog computer — popularly called the electric brain. Professor Kurt F. Wendt, Associate Director of the Station, reported that "139 projects are engaging the attention of 112 graduate students and 81 faculty members. Twenty-five projects are supported in part or whole by industry and 17 by funds from the Wisconsin Alumni Research Foundation."

He pointed out that the objectives of the station are "to promote engineering education by conducting research and training students to do research, and to cooperate with industry in the solution of broad fundamental problems."

(*Editor's Note: Pictures of the Wisconsin meet arrived too late to be included in this issue. They will be used in the April issue.*)

District 4, No. Dak. SPE, Meets at Fargo

A meeting of District No. 4, North Dakota Society of Professional Engineers was held January 28, 1950, following a banquet in the Graver Hotel, Fargo, N. Dak. The next meeting will be held in March when members' wives will be invited to help plan for the State convention in Fargo this fall.

John Oakey, professor of Civil Engineering, North Dakota Agricultural College, and vice-president of the N. Dak. chapter, reported on his recent trip to Houston, Texas, for the National convention.

Several topics were discussed, all aimed at improving conditions for professional engineers and, also, how the engineer can be of more service to his community, State, and National government. All present were urged to take a more active part in civic affairs.

The subject of public relations was also discussed with several members proposing that radio time be secured and used to tell the public about the Society and the engineering profession. Members were also reminded to place the initials P.E. after their names.

McGaughy Heads Virginia Group

John B. McGaughy, 1st Vice President of the Virginia Society of Professional Engineers, has become president upon the resignation of Lester V. Johnson, it was announced recently.

North Carolina Holds First Annual Conference

As a result of the first annual meeting of the Professional Engineers of North Carolina, it is expected that the membership list will now be well over the one hundred and fifty mark, M.

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Frank Wooten, President announced recently.

The meeting, held in Greensboro, was highlighted by the filling out of membership application blanks by many non-members. Another feature of the gathering was the presentation of a formal resolution requesting affiliation with NSPE.

Steinman Feature of N. Y. Television Show

In an excellent example of how the professional engineer can bring his story to the public, Dr. D. B. Steinman, well-known bridge expert and a long-time member of the NYSSPE, and former president of NSPE, appeared on Station WABD, the Dumont television outlet in New York City.

The interview, conducted as part of the Manhattan Spotlight Program, called for Doctor Steinman to demonstrate aerodynamic oscillations of suspension bridges and methods of prevention. During the show, moving pictures of Galloping Gertie (the Tacoma bridge) were shown, after which aerodynamic models simulated the movements of the bridge which was blown away. Corrective methods which would have prevented the Tacoma incident, and which were developed by Dr. Steinman before the incident were also discussed.

The interview also referred to "The Man Who Lassoed the Bridge," the title of the January *Esquire* magazine's article about Dr. Steinman. On the following day the subject of bridges was further discussed by Dr. Steinman over radio station WCBS.

Pennsylvania Society Tops In '49 Member Race

It has been announced that the Pennsylvania SPE held first place among the 34 State Societies last year in the number of new members gained.

Not resting on past glory, however, the Society is determined to do even better in 1950. To provide incentive, the NSPE lapel button will be given to each member who brings in 5 new members by May 1, PSPE said.

MFES Convention Largest Ever

All available space was signed for the 1950 Engineering Exposition at the Minneapolis, Minn., Armory held in conjunction with the conference of the Minnesota Federation of Engineering Societies. Harry Kaess, exposition chairman announced. National manufacturing concerns as well as more than 50 Minnesota firms exhibited the latest developments in science and engineering. The event was open to the public without cost. It attracted even greater popular interest than last year's show which drew 65,000 spectators.

C. Walter Swanberg, general chairman said the theme of the federation convention and exposition was geared to the newest interests of the members: the responsibilities of engineers to society.

NSPE Committee Heads

Budget—Russell B. Allen, University of Maryland, 4610 Hartwick Road, College Park, Md.

Chapter Activities—George J. Nicastro, 200 Madison ave., New York, N. Y.

Constitution and Bylaws—S. L. Stolte, 1437 Marshall ave., St. Paul, Minn.

Education — Dean Curtis L. Wilson, University of Missouri School of Mines and Metallurgy, Rolla, Mo.

Employment Practices — William H. Larkin, 50 Ausable ave., Staten Island 1, N. Y.

Ethical Practices — Allison C. Neff, P. O. Box 170, Middletown, Ohio.

Executive—Alan G. Stanford, Robert and Co., Inc., 96 Poplar st., N. W., Atlanta, Ga.

Extension — Col. M. J. Blew, 312 Longfellow Apts., 5521 Colorado ave., N. W., Washington, D. C.

International Relations—Lawrence E. Peterson, 321 E. Wisconsin ave., Milwaukee 2, Wis.

Inter-Society Relations—James F. Fairman, 4 Irving Place, New York 3, N. Y.

Legislative — T. C. Forrest, Praetorian Bldg., Dallas 1, Texas.

Membership — C. G. Roush, 101 W. Eleventh st., Kansas City 6, Mo.

Military Affairs—Col. W. A. Hardenbergh, 310 E. 45th st., New York 17, N. Y.

Nominating—W. A. Oliver, 402 Engineering Hall, Urbana, Ill.

Publications—C. George Krueger, 28 Cross Gates Road, Madison, N. J.

Public Relations — Frank W. Chappell, 312 Burt Bldg., Dallas, Tex.

Registration — C. L. Svensen, 905 W. 29th st., Austin, Tex.

Relations with Land Surveyors —Frank C. Mirgain, Department of Civil Engineering, Cooper Union, Cooper Square, New York 3, N. Y.

Resolutions — L. L. Dresser, Box 2518, Tulsa, Okla.

Young Engineers—William F. Ryan, Stone and Webster, 49 Federal st., Boston, Mass.

Schedule of Fees and Salaries —Ole Singstad, 15 Whitehall st., New York 4, N. Y.

New Atomic Plant Opens at Oak Ridge

The business of producing and distributing radio-active isotopes — atomic energy's first great gift to mankind—for use in medical, biological, industrial and agricultural research and for treatment of certain diseases, has reached such proportions that the Atomic Energy Commission has found it necessary to construct and to place into operation a new isotope processing area at the Oak Ridge National Laboratory.

The new isotope handling facilities are a sort of atomic pharmacy. They represent the most advanced design that could be attained. The new buildings have in them intricate remote control equipment which puts radioisotope processing, packaging and shipping on an assembly line basis, eliminating for the most part the time-consuming method of handling radioisotope shipments manually and enabling more shipments to be sent out in a shorter time.

San Jacinto Chapter Meets In Houston

The February meeting of the San Jacinto Chapter, Texas SPE, was held in Houston at the Shamrock Hotel, Monday February 13th.

The outstanding feature of the program was a talk by Mr. Nelson D. Griswold, a Professional Engineer prominent in the field of Chemical Engineering, who is Vice President, a member of the Board of Directors and Assistant Manager of the Texas Division of the Dow Chemical Company at Freeport.

Mr. Griswold spoke on the subject "Impact of Chemistry on Engineers and the Engineering Profession."

NSPE Member Becomes ASCE Director

Gordon Butler of Duluth, member of the Minnesota Association of Professional Engineers, and NSPE, has been elected a director of the American Society of Civil Engineers, it was announced recently.

D. C. Moves Nearer To Engineering Registration Law

The legislative wheels have started to spin again on the bill to establish an engineering registration law for the District of Columbia. On February 15th the Judiciary Subcommittee of the House District of Columbia Committee held a hearing on H. R. 1188, at which time representatives of the engineering societies of the District made a strong plea for bringing the District of Columbia into line with the 48 States of the Union and the U. S. possessions, all of which have an engineering registration law.

Support for the legislation was spearheaded by its engineer-congressman sponsor, Representative Carl Hinshaw, (R., Calif.). The California engineer told the Subcommittee that the District needs such a law to protect the public safety and prevent the practice of engineering by unqualified persons. He cited the successful experience of other states in the registration movement, pointing out that the District stands alone in not having this type of protective legislation.

Representatives of the National Association of Power Engineers objected to certain phases of the bill as now drawn and expressed their fear that the definition of the practice of engineering and the limitations imposed by the bill would prevent them from being called engineers and would present restrictions on activities in which they could engage. The bill, as now written, specifically exempts those holding operating engineers' licenses under a law applying to the District. The objecting group, however, indicated that they wanted an amendment which would exempt from the provisions of the act services performed by persons ordinarily designated as supervising engineer or superintendent of power or supervising electrical maintenance or service engineer who supervises the operation of machinery or equipment, or operates the same, or the installation of equipment within a plant which is under his own immediate supervision.

The professional engineers of the District supporting the bill assured the power engineer group that there was no intent to restrict the practice of the operating engineers. Following this development representatives of the D. C. Council of Engineering and Architectural Societies met with representatives of the power engineers to discuss a broadening and clarification of the exemption for power engineers. The meeting indicated that the problem presented by the power engineers can be resolved satisfactorily and a draft of an amendment to accomplish this was taken under advisement by the several groups.

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Plans Complete For State Secretaries' and Presidents' Conference

Arrangements have been completed for the State Secretaries' and State Presidents' Conferences to be held March 9, 10, and 11, at the Maxwell House in Nashville, Tennessee.

The Secretaries' Conference is scheduled for March 9 and 10, and the Presidents' Conference for March 10 and 11. The schedule follows:

March 9: Entire day devoted to administrative details of society administration which are the function of the State Secretaries.

March 10: A joint meeting of the Presidents and Secretaries at which time discussions will be devoted to joint administrative matters such as membership programs, enforcement proceedings, legislative activities, and so forth.

March 11: State Presidents' discussion of programs, information, philosophy, and similar matters.

"There are three objectives of the conferences," Paul H. Robbins, Executive Director, NSPE, said. "One, to permit the exchange of ideas. Secondly, to coordinate state and national activities, and lastly, to acquaint new officers with activities and programs being carried on by NSPE and other state societies."

State societies have been asked to bring displays depicting their activities to the meeting. These may include: copies of state and chapter publications, programs of state and chapter meetings, charts or other display material, membership brochures, rosters, application forms and standard record forms, examples of publicity, special project material, schedules of fees and salaries, etc.

An Executive Committee meeting of NSPE officers will be held on March 8.

Pennsylvania News Notes . . .

Erie — The January 23 meeting featured Ross Webb as the speaker—the subject "Traffic Problems of Erie and Vicinity."

Johnstown — Have promoted their President "Hank" Gardner to the post of Past-President. George F. Geis is the new President and Franklin Miller remains as Secretary. Best of luck for 1950!

(*Continued from page 9*)

ers held the stage during that time.

By 1900, railroad engineering was ready to enter its second stage of development. One farsighted editor summed up the impending change in January, 1900, when he wrote: "The last 50 years were a period of construction; the next 50 will be an era of intensive development. By 1950, vast increases in efficiency will have transformed railroading as we know it today."

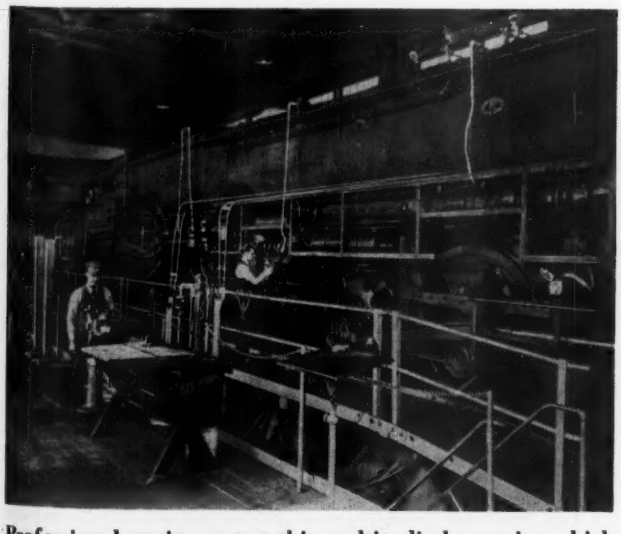
THESE were prophetic words. For by 1900, most of the nation's great railway network had been constructed, and the few remaining frontiers were being conquered. Engineers were free to concentrate on ways and means of improving railroads, to enable them to serve a growing population with the utmost efficiency.

In response to the need for greater efficiency and standardization, the American Railway Engineering Association was founded in 1899. The A.R.E.A. provided the means for consideration of these problems by a group of railway engineers and operating officials who had responsibility for the roadway and structures of their respective companies. It was clear to these alert founders that all of them could learn by comparison and exchange of ideas and experience. The appearance on the scene of their first manual in 1905 was a milestone of progress in railroad engineering. This organization assured railroad engineers —as it still does—that they would have the benefits of new developments in science and industry through research as soon as such developments were available.

Civil and electrical engineers, as well as mechanical, began to cooperate more effectively in improving railroad plant and equipment.

The engineers of 50 years ago could not foresee that the day of the 100-ton locomotive would pass, and that it would be superseded by the 200-ton, the 400-ton, even the 463-ton locomotive. They could not predict, either, that within 50 years the freight traffic per mile of road would be multiplied by four, and the passenger traffic per mile of road by two and a half. The practicability of sustained average high speeds was still in the future.

But while the men of 1900 could not foresee all the conditions of 1950, they were at work laying the foundations for meeting these conditions, insofar as construction and maintenance, civil and electrical engineering could do so.



Professional engineers test this multi-cylinder engine which utilizes four cylinders in place of two. As a result of the successful conclusion of this and other tests, fifty more units are being built by the Pennsylvania R.R.

96′ girder for center span of new bridge is locked into position with temporary diagonal support in place. Job of lowering 37-ton girder took 3½ hours, and was complicated by a stiff breeze estimated as exerting as much as 12 tons pressure against member.

The maximum weight of rail in use 50 years ago was about 100 pounds to the yard. Today, the average weight of all rail in tracks is more than the maximum weight of that time. And that is only the beginning of the measurement of improvement—for as the weight of rail increases, the gain in strength, in wearing quality and in safety goes up at a higher rate. The result is that today's track structure, called upon to carry a traffic four times as heavy and about twice as fast as the traffic of 50 years ago, handles its job better than did the track of that time. And the study and research which produced such results are going on today on a broader front and at an accelerated pace.

AT the turn of the century, crossties were being put into track at the rate of about 400 ties per mile per year—more than three times as many per mile each year as are being used now. At present-day costs, it is apparent that in this one feature of maintenance alone, half a century of research has resulted in savings of as much as $1,000 per mile each year. Continuing research is directed not only to improved preservation against decay but also to better protection of the tie against mechanical wear and damage, all to the end that railroads may make better use of better ties, with greater efficiency and at less cost.

Railroad engineers in 1900 could not foresee development of the diesel locomotive, or larger and lighter freight cars, or the enormously expanded use of off-track mechanized work equipment, with all the gains in efficiency which they have made possible. However, they were paving the way for these developments.

NEITHER could they anticipate today's more efficient signals and communications, which expedite the movement

Speaking of Progress...

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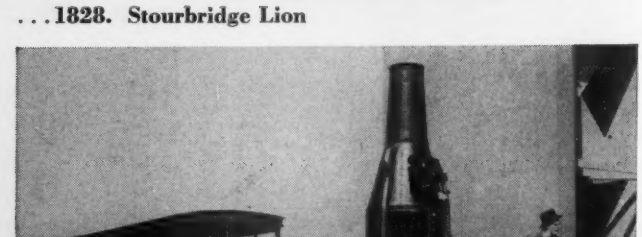
...1830. Best Friend



...1902. Twentieth Century Limited

...1950. The Golden Gate

of longer and faster trains over heavier track. And yet their pioneering research in more efficient ways of railroading has paid off in automatic block signals. It has resulted in centralized traffic control—or CTC— which enables a dispatcher to control train movements through remote control of switches and signals by electricity from a master control board. On this board the operator sees the track in miniature before him. Lights show the location of all trains at all times, from a few miles to 475 miles or more. CTC makes possible closer "meets" between opposing trains and faster "run-arounds" of slow trains by speedier ones, and makes it impossible to set up conflicting train movements.

While railroad engineers were laying the foundations for these improvements, they were simultaneously acquiring new responsibilities. In the era of railway expansion which chiefly featured new construction, the engineer was so concerned with getting a railroad built in a hurry, under almost any circumstances, that he could not be held responsible for its failure. The passing of that phase of railway history brought a change. The engineer now has the great responsibility for adoption and use of proper standards of roadway and track. Railroad engineers of the present generation deserve a great deal of the credit for the splendid physical plant of today's railroads.

At the same time, in a period of increasing mechanization and new devices, the profession of railroad engineering has come to require an alertness to better and more efficient techniques, which exceeds that needed in any earlier generation.

In giving railroad engineers the fullest praise and credit for producing the finest transportation plant the world has ever seen, it is no detraction to emphasize that they have had the assistance of very able engineers in other fields of endeavor.

The superior quality of steel, which long ago took the place of iron, is the basis for the most spectacular improvement in strength and endurance of track. And this has resulted from the pioneer efforts of engineers outside of railroading who, cooperating with railroad engineers, have devoted their energies to improving steel.

METALLURGICAL engineers have been among the greatest contributors to railroad progress. The perfection of the detector car for finding hidden flaws in rails, the passing of the old hand car, the advances in wood preservation, and the use of adequate tie plates are typical of the efficiency that has resulted from the cooperation of railroad engineers with experts in other lines of activity.

The electrical systems which light the interiors of trains have also been developed by non-railroad engineers and railroad engineers working together. There have been many other spectacular contributions to railroading made by engineers and inventors working in other fields.

What will tomorrow bring in the field of railroad engineering? Engineers of today could no more predict the developments of the next 50 years than could those of 1900 foresee railroading methods of the present. However, one thing is certain: progress will be made, and it will be rapid. The railroads' great new research laboratory at the Illinois Institute of Technology in Chicago will soon be opened. In it, in other laboratories all over the nation, and out along the line of track, railroad engineers will continue the search for new and better methods of railroading.

The need for constantly increasing efficiency will always present challenges to railroad engineers. Their past history proves that they are very capable men at meeting them.

WHAT THEY'RE SAYING

(Continued from page 13)

Many employers are requiring certain members of their engineering staffs to apply for licenses. If, for example, a fatal accident should occur through a faulty engineering design, an unregistered man who made such faulty design could be prosecuted for manslaughter, whereas a registered engineer under the same circumstances is merely guilty of an error in professional judgment. Dr. Weiss added that "the various manifestations of professional recognition of engineers are individually small, but the results are cumulative and steadily increasing."—*From Mechanical Engineering, February*, 1950.

2 x 2 = 4 . . .

The Santa Fe *New Mexican* ran the following editorial by Will Harrison on January 12, 1950.

"For collectors of mixed metaphors we offer:

"State Highway Engineer Burton Dwyre walked into a lion's den and came out with the aroma of a rose.

"It was pretty much like that when the engineer appeared before Sen. Dennis Chavez' sub-committee here Tuesday. Senator Chavez has long been critical of the state highway department and currently is hypercritical of the whole crowd at the statehouse. Reporters covering the hearing had been alerted to be on hand for the engineer's testimony and it was talked all around that the senators were going to peel his hide.

"From the start Dwyre had polite and intelligent answers, he came up with some new information that interested the senators, and the first thing you knew they were all singing in harmony. The session closed with the senators scolding the highway commission and praising the engineer.

"It was a strange result for an engineer—a breed that is commonly blunt, belligerent, and inarticulate on any subject outside the slide rule orbit—but not for Dwyre. He has worked for the highway department for 29 years under 11 governors and survived the earthquakes of 14 New Mexico elections. That kind of conditioning makes a senatorial quiz a pleasant relaxation.

"Over a long period Dwyre has combined professional integrity with an ability to get along with people that has worked well for his department and the state at large."

Although it is, and deservedly so, extremely flattering for Burton Dwyre, our much appreciated State Highway engineer, I, as an engineer, was not quite sure what to think of that one sentence: " . . . an engineer—a breed that is commonly blunt, belligerent, and inarticulate on any subject outside the slide rule orbit— . . . "

This short and boiled-down analysis of the prototype of our profession gave me much food for thought, but I finally came to the conclusion that Harrison, as usual, had hit the nail on the head and was right.

Sure we engineers are blunt. It is inherent to our profession to be so. 2 x 2 is 4, and not somewhere between $3\frac{1}{4}$ and $4\frac{3}{8}$, just because we are talking to an important politician. 2 x 2 is 4, and $1\frac{1}{2}$ or $6\frac{1}{4}$, just because the man who asks us would like that incorrect answer much better and can lay us off if we don't suit him. 2 x 2 is 4 and nothing else, regardless of the votes the man we are giving the answer to controls, or the influence with the higher-ups he may have. It will always be 4 and nothing else, as long as we engineers have our professional pride, cherish our professional integrity, and refuse to surrender to gashouse politics. Beware, if we should ever do so, because the nightmarish image of the ruins of caved-in bridges, and the screams of injured people in agony caught in the collapse of our structures will haunt us all over hell.

Sure we are belligerent, we have to be. We must defend our tenet, our principles, the plans we prepared which are our brainchilds. Nobody will order or even think of asking a doctor to make an incision only a half-inch long, or to prescribe a sweet tasting medicine instead of a bitter one. But how many of us had an experience with non-technical people feeling themselves qualified to demand us to reduce the costs of a project by simply using smaller beams, less cement in the concrete, leave out half or more of the reinforcing iron and not dig so terribly and uselessly deep before placing the foundations?

Nobody would ever dare to contradict a doctor, hardly anyone argues with a lawyer because most people when consulting them are already so deep in trouble that the ambition to argue has left them long before, but anyone feels qualified to criticize an engineer, usually justifying such action with a proud remembrance of a chicken coop they once built without help or a leaking faucet they repaired after much prodding by their wife. An engineer will answer your query straightforward but with a belligerency, if you should feel inclined to argue, not because he particularly enjoys this, but only because he sees clearly the futility to argue with formulas and facts. Maybe we are not always diplomatic in our belligerency and here probably the Hon. Burton Dwyre has many of our colleagues beat. He probably remembers more often than most of us do that "one catches more flies with honey than with vinegar."

But it takes a peculiar kind of callousness to stand the brazen impertinence of the public which acts so often with a clearly expressed attitude of: "I know more than any one of these damned engineers." "Gouverner, c'est prevoir," is a French term with a deep and eternal truth. Engineering is likewise. That's another thing very few people recognize in our plans. They would like us to make the roof just strong enough to carry the weight of the shingles and call it high-faluting nonsense to insert a safety factor for eventual snow or wind loads. How many of us prepared plans for a drainage structure, carefully calculated according to Hoyle and Seelye's excellent book of data, to be sufficient for the once every 50 years to be expected run-off, to have it reduced to 15% of its capacity by an irate rancher not willing or even able to see beyond the length of his nose.

Will Harrison's third qualification is a little harder to swallow but nevertheless it must be accepted. Too many of us have lots of formulas in our heads and no Shakespeare, too much steel beam dimensions and no Beethoven or Bach, at all. Maybe our engineering schools are to blame for concentrating too much on abstract science and neglecting the humanities. —*New Mexico Professional Engineer and Contractor, February*, 1950.

NSPE Joint State Pres. & State Secs. Conference—March 9, 10, and 11, Maxwell House, Nashville, Tennessee.

Connecticut Society—March, Bridgeport, annual meeting.

Ohio Society—March 16, 17, and 18, Biltmore Hotel, Dayton, annual meeting.

New Mexico Society—March 31, April 1, Albuquerque, annual meeting.

New Jersey Society—April 14, and 15, Essex House, Newark, annual meeting.

New York State Society—May 4, 5, and 6, Statler Hotel, New York City, Mid-Century Convention and Engineering Industries Exposition.

Pennsylvania Society—May 19, and 20, New Castle, annual meeting.

District of Columbia Society — May 22, Washington, D. C., annual meeting.

Massachusetts Society—June 8, 9, and 10, Statler Hotel, Boston, annual meeting.

NSPE Annual Meeting—June 8, 9, and 10, Statler Hotel, Boston.

Public Relations For Engineers

(*Continued from page* 11)

needed it. And don't fall into the grievous error of assuming that those problems are over. There will always be times when vital supplies will not be immediately available, and when only the good will of a supplier will perform the near miracle of locating and providing the unobtainable item without which a production line must shut down or an imperative delivery date be missed.

Competitors

Suppose a competitor wins an important order away from your company, and then discovers that to complete it expeditiously, needs to have you perform one or two operations. Don't miss on that one. Do their heat treating for them. You may need their special press next week. Moreover, remember that for every call your salesman makes on a customer, your competitors make a dozen or more. If they all have it in for you, you can't win. But if the worst they can say about you is that you're tough competitors, you're in clover!

What can You do About it?

So what does this all add up to? Simply this. Neither you nor your company or client can choose whether or not to *have* Public Relations. Good, bad, or indifferent, you already have them. Your only choice is whether or not to try to improve them.

YOU have relations not only with one public but with several. And each public is simply a grouping of people.

The processes of winning the esteem of people are the same for a Company or a profession, or a society, as for an individual. Constructive purposes—considerate treatment—thoughtful interpretation—and finally communication as often as possible to the publics involved.

The rewards of a carefully planned and executed program of public relations are so abundant and self-perpetuating that most progressive organizations today have accepted public relations as a prime function of their managements. And the engineer who understands the principles of good public relations and unfailingly applies them on behalf of his company or client, inevitably advances his own standing with theirs. And the interesting thing is that to the extent to which he is successful, he is at the same time winning favorable public relations for the entire profession.

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